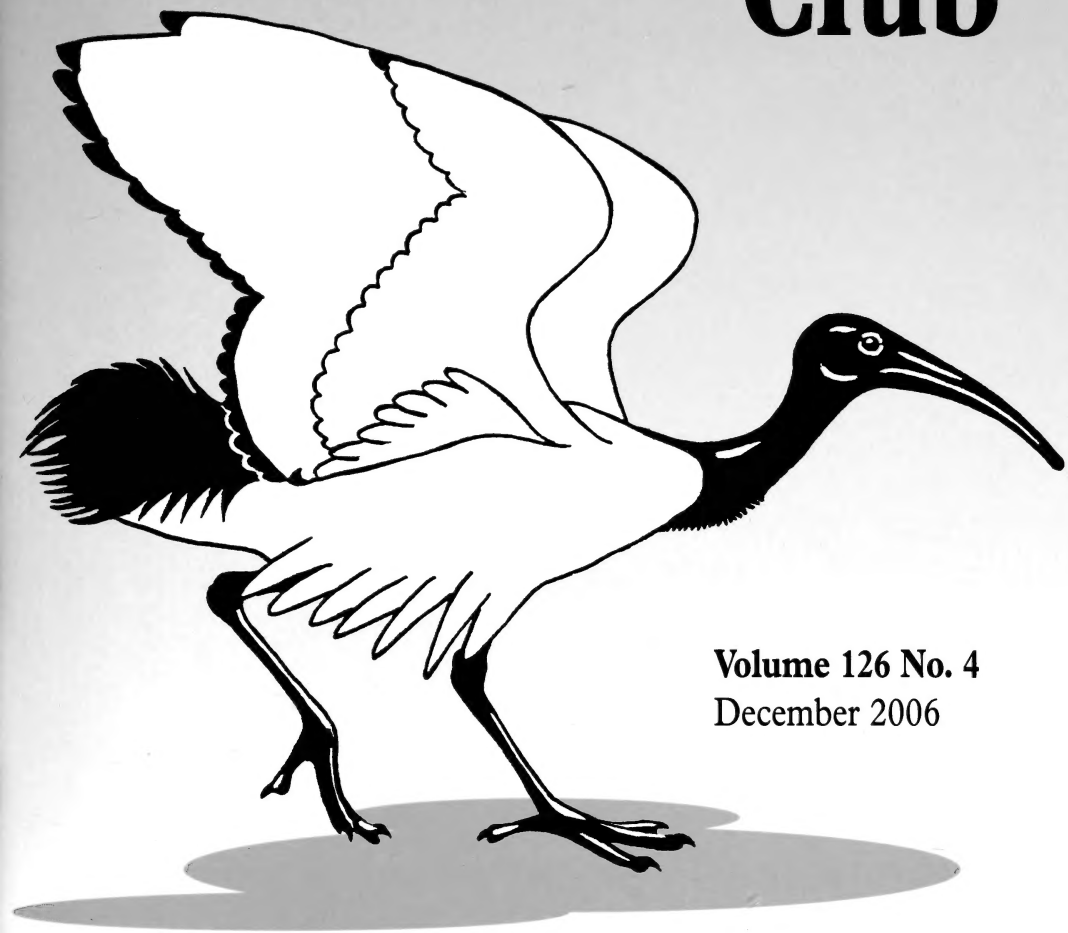
Bulletin of the British Ornithologists' Club



Volume 126 No. 4
December 2006

MEETINGS are normally held in the **Sherfield Building** of **Imperial College**, South Kensington, London SW7. The nearest Tube station is at South Kensington; a map of the area will be sent to members, on request. (Limited car parking facilities can be reserved [at a special reduced charge of **£5.00**], on prior application to the Hon. Secretary.)

The cash bar is open from **6.15 pm**, and a buffet supper, of two courses followed by coffee, is served at **7.00 pm.** (A vegetarian menu can be arranged if ordered at the time of booking.) Informal talks are given on completion, commencing at about 8.00 pm.

Dinner charges will be increased to **£22.50** per person as from **1 January 2007.**

FORTHCOMING MEETINGS

See also BOC website: **http://www.boc-online.org**

30 January 2007—Anthony Cheke and Dr Julian Hume—*New insights into the original avifauna of Mauritius: an ecohistological and palaeontological reappraisal.* The speakers are co-authors of *Lost land of the Dodo* (forthcoming) and veterans of Mascarene wildlife research. They will cover the recent and very exciting Mare aux Songes dig, a forthcoming (November) cave dig on Rodrigues, and sketch some of the broader historical background.

Applications to Hon. Secretary (address below) by ***16 January***

13 March 2007—Paul Donald—*An unlikely survivor: the peculiar history of the Raso Lark*
Paul Donald is a senior researcher in the RSPB's International Research Team and author of many publications on larks. Recent research on the Raso Lark *Alauda razae,* one of the world's rarest species, has revealed much about this species' extraordinary natural history and suggests it has much to tell us about island biogeography.

Applications to. Hon. Secretary (address below) by ***27 February***

24 April 2007—**Annual General Meeting at 6.00 pm**, followed by **Club Social Evening**. There will be no booked speaker, but members are invited to bring along one or two slides, a short PowerPoint presentation or a specimen (!) of a bird or ornithological subject of topical interest, and to speak for **not more than 5–10 minutes**. The aim will be to generate discussion and to facilitate the exchange of information between members.

Applications to. Hon. Secretary (address below) by ***10 April****, including subjects to be raised and any special facilities (e.g. a laptop computer) required.*

10 July—speaker to be announced

25 September—Lord Cranbrook—*Swiftlets*

6 November—David Fisher—*Birds of Australia*

Please note that only six meetings are scheduled for 2007

Overseas Members visiting Britain are especially welcome at these meetings, and the Hon. Secretary would be very pleased to hear from anyone who can offer to talk to the Club giving as much advance notice as possible—please contact: S. A. H. (Tony) Statham, Ashlyns Lodge, Chesham Road, Berkhamsted, Herts. HP4 2ST, UK. Tel. +44 (0)1442 876995 (or e-mail: boc.sec@bou.org.uk).

Bulletin of the BRITISH ORNITHOLOGISTS' CLUB

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CLUB ANNOUNCEMENTS

Subscriptions Members are reminded that these are due and will change as of 1 January 2007 (see inside back cover of this issue). There will no longer be a differential rate for members or non-members of the BOU. For 2007, a single rate of £20 per annum will apply and there will no longer be an option to pay in US$. A revised subscription rate also applies for Institutional subscribers from 1 January 2007, of £40 per annum, again without the US$ option.

Members are also reminded that **membership correspondence, applications for membership, changes of address** and all other membership-related items should be addressed to the BOC Office in Peterborough (see inside back cover).

Dinner charges Members are advised that meals at Club dinner meetings will cost **£22.50** per head as of 1 January 2007.

The 937th meeting of the Club was held on Tuesday 25 April 2006, in the Sherfield Building Annexe, Imperial College, London, following the AGM. Nineteen members and six guests were present.

Members attending were: Cdr. M. B. CASEMENT, RN (*Chairman*), Miss H. BAKER (*Vice-Chairman*), D. R. CALDER, Prof. R. A. CHEKE, Dr J. COOPER, D. J. FISHER, F. M. GAUNTLETT, Revd. T. W. GLADWIN, D. GRIFFIN, Dr J. P. HUME, K. N. IDDI, G. M. KIRWAN, R. R. LANGLEY, Dr C. F. MANN, D. J. MONTIER, Mrs M. N. MULLER, S. A. H. STATHAM, M. P. WALTERS and P. J. WILKINSON.

Guests attending were: Mrs C. R. CASEMENT, Mrs M. H. GAUNTLETT, Mrs J. M. GLADWIN, Mrs M. MONTIER, Mr C. MULLER and Mr J. SCHARLEMANN.

After dinner, **Michael Casement** outlined a long term 'vision for the future,' summarised in *Bull. Brit. Orn. Cl.* 126: 165. Several members gave short talks on subjects of topical interest; the following is a synopsis.

Kassim Iddi discussed *Human depredation and the wild bird trade in West Africa.* The decline and extinctions of bird populations in many parts of the world have been attributed to habitat loss, but hunting and trade have also played major roles. Africa is no exception and a study of the problem in West Africa was described. This revealed that taste and preference influence choice of prey, and birds were often divided into either palatable (nearly all gamebird families, ducks, geese, etc.) or unpalatable species (mostly conspicuously coloured birds, e.g., plovers, turacos, hoopoes, kingfishers, hornbills, starlings etc.). The most preferred species in 20 hunting communities were Helmeted Guineafowl *Numida meleagris*, for meat, and African Grey Parrot *Psittacus erithacus*, for the live trade. Traditional medicine is by far the most significant socio-cultural use of birds and the products of birds such as vultures and owls are extracted and mixed with concoctions to enhance learning and cognitive performance, and treatment of diseases. The demography of African Grey Parrot and Helmeted Guineafowl populations suggests that a percentage of each could be harvested without adverse affect, but that extraction rates necessary to maintain the economic viability of the trade would prove unsustainable.

David Calder recounted an incident on a cruise ship in the south-east Black Sea on 3/4 October 2005, when many migrants were forced down by a weather front moving east along the north coast of Turkey. Large numbers of birds, mainly Common Quails *Coturnix coturnix*, Barn Swallows *Hirundo rustica* and *Acrocephalus* warblers, came aboard during the night and remained until the ship approached

land at Trabzon. The flock also included two Nutcrackers *Nucifraga caryocatactes*. Most birds dispersed soon after dawn, but some remained aboard several days.

Martin Gauntlett addressed the need for *A universal taxonomic committee*. In Britain the BOU Records Committee officially decides which taxa are species, and similar bodies exist in North America, South Africa and Australia. Unfortunately, these august bodies do not always agree, e.g., the BOU recognises Common *Anas crecca* and Green-winged Teals *A. carolinensis* as separate species, whereas the AOU does not. Vol. 10 of *HBW* splits both Naumann's *Turdus naumanni* from Dusky Thrush *T. eunomus* and Black-throated *T. atrogularis* from Red-throated Thrushes *T. ruficollis*, but the BOU recognises just two species, not four. This is only the tip of the iceberg, because most taxonomic work relates to South America, sub-Saharan Africa and south-east Asia which, except in the former case, lack a centrally organised authority to pronounce on such changes. Martin suggested an international committee be established to review evidence for proposed species splits and to give their official blessing (or not). This would amount to an official World List Committee, and might function under the auspices of the IOC. Is international ornithological cooperation so difficult? Perhaps the BOU could take a lead in this.

Julian Hume outlined an *Excavation of the Mare aux Songes, Mauritius, Mascarenes*. This locality was discovered in 1865. Following a more thorough excavation in 1889, the site was no longer considered scientifically productive. In October 2005 new fossil layers were discovered, below the 19th century excavations and, unlike the original material, uncontaminated by man. I took part in a more comprehensive excavation, undertaken by a Dutch/Anglo multidisciplinary team, and over 4,000 bones were collected. The remains include small vertebrate bones, previously unavailable, and extremely well preserved and articulated elements of species such as Dodo *Raphus cucullatus*. More importantly, and for the first time, contextual data concerning geology, sedimentology, taphonomy, dendrology and palyonology was obtained. Results should be published in 2006.

Jo Cooper had also visited an excavation. in Morocco. The Late Pleistocene site, Taforalt Cave, has been the focus of recent excavations by the Institute of Archaeology, Univ. of Oxford and the Institut National des Sciences d'Archéologie et du Patrimoine, Rabat. Though best known for its human burials discovered during the mid 20th century, recent digs have also yielded several hundred bird bones of at least 13 species, including taxa now extinct in Morocco, e.g. Ostrich *Struthio camelus*. It is hoped that these will provide environmental information about local Pleistocene habitats, but they may also prove archaeologically significant, as some specimens appear to show evidence of possible butchery. Morocco's Pleistocene bird record is poorly known, and these collections therefore represent a small but significant glimpse into the prehistory of the modern avifauna.

David Fisher illustrated his talk with some excellent photographs taken at Hato El Cedral, Venezuela. It is well known that two of the best areas for waterbirds in South America are the Pantanal, which lies mostly in Brazil, and the *Llanos* of Venezuela / Colombia. At both, in the late dry season spectacular concentrations of waterbirds are attracted to drying-out pools and lakes, and certain ranches have recognised the potential for tourism. Amongst the most famous is Hato El Cedral in the Venezuelan *Llanos*, which I have visited regularly since 1997. Numbers of waterbirds have always been impressive, but since 2004 they have been truly staggering. It is also diversity that is impressive: three species of storks, 16 herons and egrets, seven ibis, a spoonbill, dozens of waders, various terns, skimmers, five species of kingfisher, etc. Amongst these are, inevitably, a number of 'rarities.' In earlier years, the main prize was Agami Heron *Agamia agami*, which is still present, but more recently has been outclassed by the discovery of Zigzag Herons *Zebrilus undulatus* apparently resident in small numbers in the same woodland. Initially the Zigzags were rather shy, but by 2006 were much more confiding. Whilst Zigzags can be seen elsewhere in South America, they are seldom as obliging as at El Cedral.

Peter Wilkinson concluded the evening with an update on the *Conservation of the Barn Owl in the UK*. *Tyto alba* declined significantly over much of the 20th century, mainly due to loss of habitat and nest sites. Fortunately, the species takes readily to nest boxes and, with the return of rough grassland encouraged by agri-environment schemes, the population appears to be on a modest upward trend.

REVIEW

Jones, P. & Tye, A. 2006. *The birds of São Tomé & Príncipe with Annobón.* BOU Checklist Series 22. 192 pages, 16 pages of colour. BOU & BOC. Titles in this series can be ordered at www.bou.org.uk/pubchkl.html. Telephone and postal orders: BOU, Dept. of Zoology, Univ. of Oxford, South Parks Rd., Oxford OX1 3PS, UK. Tel. / Fax: +44 (0)1865 281842. E-mail: sales@bou.org.uk

Until 1988, what was known of the birdlife of these rarely visited islands was restricted to collectors' accounts and a few private visits and expeditions; ornithologically, they were amongst the poorest known regions in Africa. Three species had not been seen since 1928/29 and one since 1890, and were thought by some to be extinct. Since a visit by the authors in 1988, São Tomé and Príncipe have opened up to birders and a wealth of new data has been collected. An overview has been long overdue and this checklist plugs the gap.

Introductory chapters include details of the islands' volcanic geology, the history of avifaunal investigation and an interesting discussion of endemism and the origins of various species. This section includes a picture of José Correia, a remarkable collector who visited the islands in 1928/29 and, unusually for then, recorded some fascinating insights into avian behaviour and ecology, alluded to here. There follow a description of the main habitats and the endemic birds they harbour, as well as data on breeding, migration and turnover. Finally, conservation and the threats facing the endemic species are discussed.

The systematic list details all records of scarce and rare species and, in many cases, records of commoner species are also listed in some detail and referenced. After describing status on each island, there are sections on habits, breeding and threats, as appropriate. Where possible, local and Portugese names are included. Records for which little or no documentation is available are included but flagged as such. The most interesting accounts are the endemics and seabirds, e.g. the four Maderian Storm-petrels *Oceanodroma castro* collected by Correia, which differ from the nominate in being larger with reduced white on the rump. This mystery remains unsolved. The accounts for the four 'rare' endemics also make fascinating reading. Even now, only a handful of ornithologists and birders have seen these species. In sum, this checklist provides a benchmark on which future work will build.

Phil Atkinson

REFEREES

I am grateful to the following, who have reviewed manuscripts submitted to the Bulletin during the last year (those who refereed more than one manuscript are denoted by an asterisk in parentheses): Paul Andrew, Richard Banks, Bruce Beehler, Walter Boles, Murray Bruce, Stuart Butchart, Daniel Cadena (*), Geoff Carey, Peter Castell, Anthony Cheke (*), Terry Chesser, Bill Clark (*), Paul Coopmans (*), Peter Cowan, Ron Demey, Edward C. Dickinson (*), Thomas Donegan (*), Bob Dowsett (*), Françoise Dowsett-Lemaire (*), John Dunning, Chris Filardi, Jon Fjeldså (*), Dick Forsman, Juan Freile, Anita Gamauf, Tony Gaston, Brian Gill, Héctor Gómez de Silva G., Steven Gregory (*), Bennett Hennessey, Sebastian Herzog, Julian Hume, Jerome A. Jackson, Frédéric Jiguet, Oliver Komar, Niels Krabbe (*), Mary LeCroy, Jeremy Lindsell, Wayne Longmore, Manuel Marín, Peter Meininger, Cécile Mourer-Chauviré, Storrs Olson, Fernando Pacheco, Alan Peterson (*), Robert Prŷs-Jones, Marcos Raposo, Van Remsen (*), Mark Robbins (*), Craig Robson, Kees Rookmakker, Kees Roselaar, Peter Ryan, Roger Safford, Frank Steinheimer, Lars Svensson, Gary Voelker, Bret M. Whitney and Kevin J. Zimmer.—THE EDITOR

Sympatric breeding of two Spot-billed Duck *Anas poecilorhyncha* taxa in southern China

by Paul J. Leader

Received 17 November 2005

Spot-billed Duck *Anas poecilorhyncha* is generally considered a single species with three subspecies: *poecilorhyncha*, *haringtoni* and *zonorhyncha* (e.g. Dickinson 2003). However, its taxonomy has long been problematic; many workers have inferred close relationships with South Pacific mallards and treated the more northerly *zonorhyncha* as a race of *poecilorhyncha* (e.g. Johnsgard 1979), or have included both *zonorhyncha* and Pacific Grey Duck *A. superciliosa* within *poecilorhyncha* (Delacour 1956, Johnsgard 1978). Livezey (1991), based on an analysis of external morphology, considered that they comprised two species: *A. poecilorhyncha* (including *haringtoni* as a subspecies) and *A. zonorhyncha.* This treatment has been reinforced more recently by Rasmussen & Anderton (2005). Here I report on sympatric breeding of *A. p. haringtoni* and *zonorhyncha* in southern China which further supports the treatment of *zonorhyncha* and *poecilorhyncha* as specifically distinct.

The taxon *poecilorhyncha* is restricted to the Indian subcontinent, east as far as Manipur (Delacour 1956, Johnsgard 1979). The range of *haringtoni* is noted as eastern Assam, Burma and Indochina south to *c.*17°N and north to northern Yunnan (Dement'ev & Gladkov 1967, Delacour 1956, Vaurie 1965). Cheng (1979, 1987) listed *haringtoni* from Yunnan and possibly Guangzhou, Guangdong province, the latter record being based on Fok (1937). Carey & Melville (1996) discussed two other Guangdong specimens of *haringtoni* in the Natural History Museum, Tring. One of these is potentially a market bird from Canton; the other is a male collected by Vaughan on 5 April 1905 at 'Sam Shui, Kwang Tung.'

Although Spot-billed Duck has long been known to occur regularly in south China and Hong Kong (e.g. Vaughan & Jones 1913), it had been generally considered that the only taxon occurring in Hong Kong was *zonorhyncha.* The presence of *haringtoni* in Hong Kong was first noted in 1974, but there were no further records until 1993 (Carey & Melville 1996, Carey *et al.* 2001). Since 1993 *haringtoni* has occurred regularly, albeit in smaller numbers than *zonorhyncha.* Carey *et al.* (2001) noted that *haringtoni* is apparently resident, with a max. 40 in October 1997. A female with chicks has been noted in June, display in February, and copulation in April and September. Female *zonorhyncha* have been noted with chicks in April–May and display in March–April. Numbers of *zonorhyncha* increase in winter when this form accounts for *c.*90% of all Spot-billed Ducks. The precise number of breeding birds of both taxa is unknown due to their secretive nature at this season (Carey *et al.* 2001).

Methods

During 1994 and 1997–2005 I collected information on paired birds, in order to assess relative abundance, and to determine whether mixed pairs occur. Additional data were provided by G. Carey. Birds were treated as paired when they comprised a male and a female, based on the plumage criteria in Carey & Melville (1996), in very close proximity (no more than 2 m apart) and clearly unassociated with any other ducks (at least 100 m distant). Both birds were examined to determine which taxon was involved. Paired birds in groups or loose groups were ignored, even though mixed flocks were very rarely encountered. On those occasions when one of the birds could not be identified (too distant or obscured by vegetation) the data were disregarded. Observations were not systematic but were undertaken regularly (several times per month for most of the period).

Study area

The study focused on the Mai Po Nature Reserve in north-western New Territories, Hong Kong, People's Republic of China. Adjacent wetlands, primarily commercial fishponds, were also visited, though fewer duck tend to use such habitats in Hong Kong.

Results

During 1994 and 1997 to 2005, a minimum of 23 pairs of Spot-billed Ducks were recorded. Of these 11 (48%) were paired *haringtoni*, ten (43%) paired *zonorhyncha* and two (9%) were mixed pairs (Table 1). The mixed pairs comprised a male *haringtoni* and a female *zonorhyncha* in 1999, and a male *haringtoni* and a female with mixed features that was considered to be a *haringtoni* × *zonorhyncha* hybrid in 2005. The pattern of occurrence of the two taxa (plus birds unidentified to taxon) during the same period is shown in Fig. 1, based on monthly waterbird counts undertaken by the Hong Kong Birdwatching Society.

TABLE 1
Composition of paired Spot-billed Ducks *Anas poecilorhyncha* in Hong Kong in 1994 and 1997–2005.

		1994	1997	1998	1999	2000	2001	2002	2003	2004	2005	**Totals**
haringtoni	No. of sightings of pairs	3	4	4	1	2	0	0	0	5	4	**23**
	Min. no. of pairs	2	1	1	1	2	0	0	0	2	2	**11**
zonorhyncha	No. of sightings of pairs	1	1	5	2	0	3	1	1	3	3	**20**
	Min. no. of pairs	1	1	1	1	0	1	1	1	1	2	**10**
Mixed pairs	No. of sightings of pairs	0	0	0	2	0	0	0	0	0	2	**4**
	Min. no. of pairs	0	0	0	1	0	0	0	0	0	1	**2**
Total number of pairs		3	2	2	3	2	1	1	1	3	5	**23**

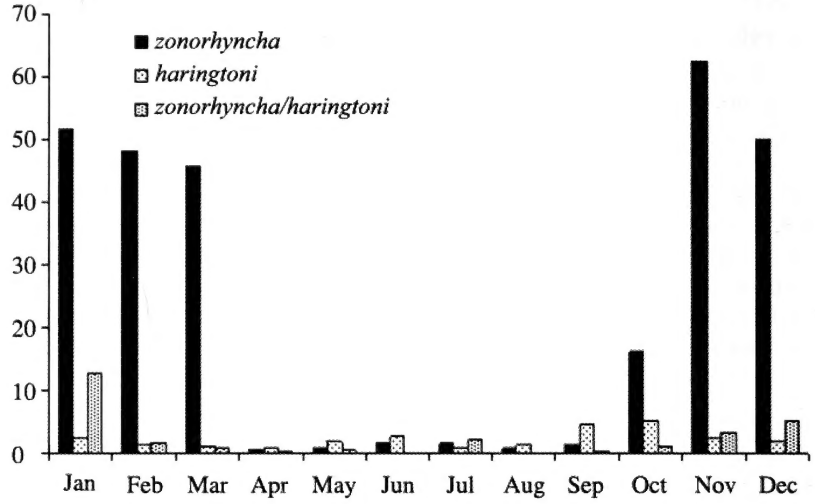

Figure 1. Mean numbers per month of Spot-billed Ducks *Anas poecilorhyncha* in Deep Bay, Hong Kong in 1994 and 1997–2005 (Hong Kong Birdwatching Society data).

Discussion

Both *zonorhyncha* and *poecilorhyncha* breed over huge areas, largely allopatrically, but are in contact in a small area in Hong Kong, where the timings of the breeding cycle overlap extensively, yet mixed pairs are rare. Pure pairs of *zonorhyncha* and *poecilorhyncha* (of race *haringtoni*) account for 91% of pairs and mixed pairs 9%; thus *zonorhyncha* and *haringtoni* exhibit relatively high levels of assortative mating, supporting their treatment as species. The hybrid female observed in 2005 is the only record of such an individual in Hong Kong, despite careful checks of many hundreds of Spot-billed Ducks since 1993 (pers. obs.).

Treatment of *haringtoni* as a race of *poecilorhyncha* and its true distribution deserve further study. In Hong Kong *haringtoni* appears morphologically very distinct from nominate *poecilorhyncha*, most notably in lacking a red bill spot even during the breeding season, but also in being more uniform overall and distinctly less spotted below. There are marked inconsistencies in the literature regarding the red bill spots in *haringtoni*; whilst some authors consider them to be smaller than those of *poecilorhyncha* (Madge & Burn 1992), others state that *haringtoni* lacks red bill-spots (Smythies 1986) or has at best only very faint traces of them (Baker 1927). Possibly this character in *haringtoni* is clinal, and that birds in the east lack bill spots; Rasmussen & Anderton (2005) stated that specimens of *haringtoni* from north-east India and Myanmar are very like nominate *poecilorhyncha*. Smythies (1986) stated that *poecilorhyncha* has been obtained in west Myanmar in Arakan and Upper Chindwin (=Sagaing), and that *haringtoni* is resident more or less

throughout the country, but commoner in the dry zone and the Shan States. A further possibility is that *haringtoni* is morphologically distinct from *poecilorhyncha* and those records of *haringtoni* referred to in, e.g., Rasmussen & Anderton (2005) are mislabeled *poecilorhyncha* and that both *haringtoni* and *poecilorhyncha* occur in Assam and western Myanmar. A check by P. C. Rasmussen of *haringtoni* specimens from Myanmar and one from south China at The Natural History Museum (Tring) confirmed that they lack a red spot, whereas all Indian skins, including those from Assam have a prominent red spot. There was no evidence of clinal variation or sympatry between *haringtoni* and *poecilorhyncha* (P. C. Rasmussen pers. comm.), but this requires checking against a larger sample and/or in the field.

A further source of potential confusion is the similarity of juvenile *poecilorhyncha* to adult *haringtoni*, a problem which has generally been overlooked in the literature; a photograph of an apparent juvenile *poecilorhyncha* is available at: www.orientalbirdimages.org/search.php?p=12&action=searchresult&Bird_ID=183&Bird_Family_ID=&pagesize=1.

Conclusions

The sympatric breeding of *haringtoni* and *zonorhyncha* in Hong Kong supports the recognition of more than one species of Spot-billed Duck, and I recommend that *zonorhyncha* and *poecilorhyncha* be treated specifically, with *haringtoni* a subspecies of *poecilorhyncha*, seconding Livezey (1991). However, further work is required on the relationship between the latter two taxa and the extent to which they differ morphologically warrants further study. Additionally, the status of *haringtoni* in eastern India, especially the question as to whether it breeds there, requires review. Most (if not all) breeding records of *haringtoni* in this area are from Baker (1927) and many of his records have been queried, especially those of breeding, most recently by Rasmussen & Anderton (2005).

Acknowledgements

I thank Geoff Carey for providing additional data, and he and Mike Leven commented on the manuscript. Pamela Rasmussen also commented on the manuscript and kindly checked specimens at The Natural History Museum, Tring. Yu Yat Tung and Carmen K. M. Or of the Hong Kong Birdwatching Society helped extract information from the Society's waterfowl count data.

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Records of some bird species hitherto rarely found in DPR Korea

by J. W. Duckworth

Received 1 December 2005

The Korean peninsula received only superficial ornithological exploration until relatively recently. The birds of the present-day Democratic People's Republic of Korea (DPRK='north Korea') are particularly poorly known (Tomek (1999, 2002). Even the south lacks a published, publicly accessible, synthesis of species status subsequent to Gore & Won (1971), other than coded lists such as Won Pyong-Oh (1996) and Lee *et al.* (2000), though an unpublished thesis (Park Jin-Young 2002) and extensive internet discussion, notably that hosted by the organisation Birds Korea, present records. During 3.5 years in DPRK and three short visits to the country, I surveyed birds extensively in central Pyongyang (the capital), the Myohyang(-san) Mountains and the adjacent town of Hyangsan, and made visits when permitted to other sites, very rarely on or near the coast (Table 1, Fig. 1). I found many species known by few previous records from DPRK according to Tomek's (1999, 2002) comprehensive review. This covers nearly all internationally available sources, but few from DPRK citizens since the monumental Won Hong Koo (1963–65). Judging by records in BirdLife International (2001) substantial

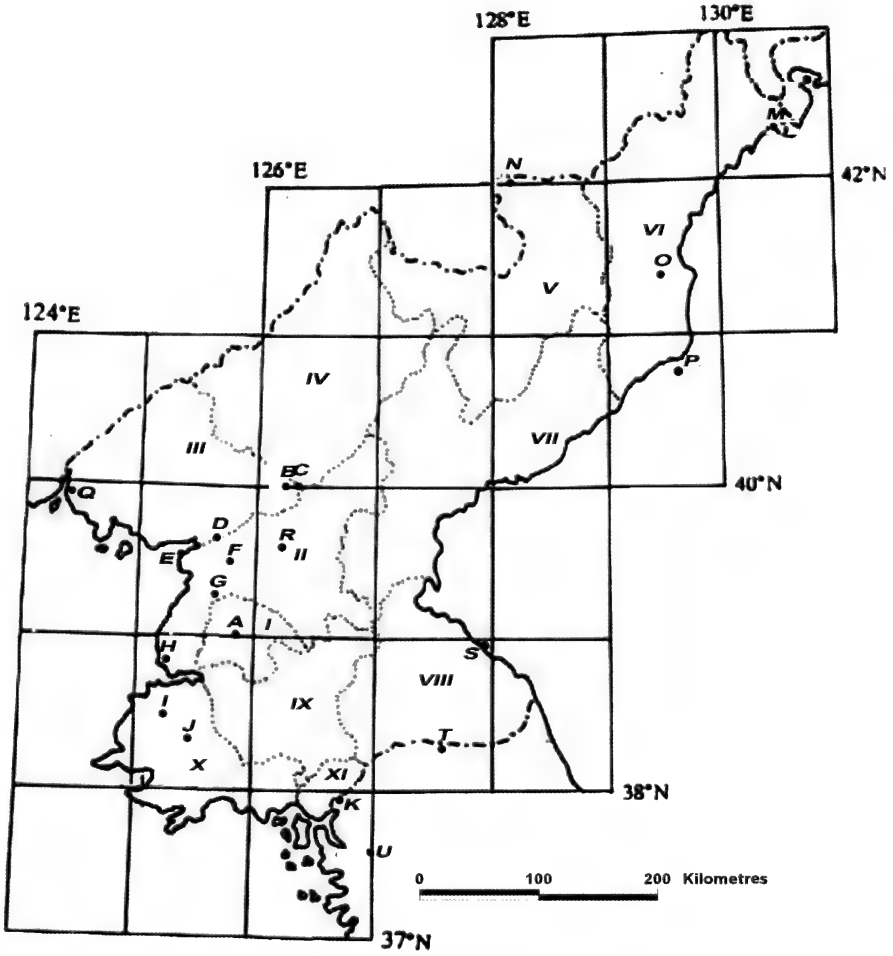

Figure 1: north and central Korea, showing survey sites (A–K) and other localities mentioned in the text. A = Pyongyang; B = Hyangsan; C = Myohyang; D = Anju; E = Mundok MBR; F = Ryanggyo Reservoir; G = Sogam dam; H = Ryonggang hot springs; I = Kuwol; J = Sinchon; K = Panmunjom; M = Manpo; N = Paekdu; O = Chuul; P = Yang-do; Q = Ryongampho; R = Tokchon; S = Kuum; T = Kumhwa; U = Seoul. Provinces: I = Pyonhang City; II = South Pyongan; III = North Pyongan; IV = Chagang; V = Ryonggang; VI North Hamgyong; VII = South Hamgyong; VIII = Kangwon; IX = North Hwanghae; X = South Hwanghae; XII = Kaesong City.

———— Land–sea boundary
_ . _ . _ . _ National boundary
. . . . . Provincial boundary

TABLE 1
Observation sites[1].

Site name	Character	Observations[2]	Coordinates and altitudes[3]
Anju, South Pyongan province	Hotel on edge of town	a few overnights in mid and late October 2004	39°37'N, 125°38'E; 0–35 m
Anju bridge, South Pyongan province	Bridge over tidal river	many brief roadside stops in 2001–03, some in 2000, 2004	39°38'N, 125°37'E; sea level
Diplomatic Compound, Pyongyang	Residential area of town	incidental throughout 2000–04	39°02'N, 125°48'E; 15 m
Han-Imjin-gang near Odu-San	lowland river plain	casual record from N. Moores (*in litt.* 2006)	37°45'N, 126°42'E; sea level
Dongrim-ri, Mundok Migratory Bird Reserve, South Pyongan province	Farmland and marsh on estuary	2–3 April 2003; 25 March, 21–23 October, 4 November 2004	39°33'N, 125°22'E; sea level
Hyangam-chon, Myohyang-san, North Pyongan province	Large, fairly level, stream amidst mountains	5–8 hours per day once or twice in various months, plus many incidental	40°01'N, 126°12'E; 100–170 m
Hyangsan, North Pyongan province	Riverside town at foot of mountains	2–3 hours per day, many days in 2001–04, some in 1999–2000	40°02'N, 126°10'E; 95 m
Kuwol-san, South Hwanghae province	Mountain range (isolated)	10–13 April 1999, many hours per day	38°30'N, 125°16'E; 110–955 m
Moran-bong Park, Pyongyang	Town park on hillock	4–8 hours per day. approx weekly August 2000–November 2003; plus some incidental	39°02'N, 125°45'E; 10–95 m
Munsu-bong Park, Pyongyang	Town park on hillock	2–4 hours one or several mornings per week, September 2001–November 2003; plus some incidental	39°01'N, 125°47'E; 10–82 m
Namei-ri, Mundok Migratory Bird Reserve	Farmland and marsh area on estuary	24 October 2004	39°34'N, 125°29'E; sea level
Nyungin-am, Myohyangsan	Valley in rugged mountains	occasional one or several-day visits various months 1999–2003	40°02'N, 126°15'E; 700–1,200 m
Panmunjom, Kaesong city (not, however, urban)	Border post, plains	midday visit 13 July 2003	37°58'N, 126°46'E; low plains
Piro-bong, Myohyang-san	Peak in rugged mountains	occasional one or several-day visits various months 2002–03	40°01'N, 126°20'E; 1,900–1,909 m
Ryanggyo Reservoir, South Pyongan province	Reservoir in lowlands	many brief roadside stops in 2002–03, some in 2001, 2004	39°22'N, 125°41'E; 100 m
Ryonggang hot springs, South Pyongan province	Resort near coast	overnight 30–31 October 2004	38°54'N, 125°13'E^; sea level
Ryongro-ri, Mundok Migratory Bird Reserve	Farmland and marsh on estuary	3 April 2003; 25 March, 23, 27–28 October 2004	39°34'N, 125°28'E; sea level

Sinchon, South Hwanghae province	Town amidst agricultural lowlands	midday visits on 4 November 2001; 9 September 2002; 17 November 2002	38°21'N, 125°29'E; low plains
Sogam dam, South Pyongan province	Farmland near large reservoir	incidental observations from car; reservoir not visited	39°17'N, 125°42'E[4]; 60 m
Soho-ri, Mundok Migratory Bird Reserve	Farmland and marsh area on estuary	2 April 2003; 25 March, 22 October 2004	39°31'N, 125°24'E; sea level
Taedong-gang, central Pyongyang (including Rungra-do islet)	Urban large river, including flanking town parks	2–4 hours one to several mornings per week; plus some incidental	39°01'N, 125°45'E; 10 m
Wonman-bong, Myohyangsan	Peak in rugged mountains	occasional one or several-day visits various months 2001–03	40°01'N, 126°19'E; 1,600–1,825 m

[1] Does not include sites with no records of the species covered here.

[2] I made observations on 7 April–3 May 1999, 18 July–2 October 2000, 26 October 2000–3 February 2001, 24 February–18 March 2001, 12 May–15 June 2001, 21 July–17 August 2001, 15 September–16 December 2001, 31 January–1 March 2002, 31 March–4 May 2002, 18 May–13 July 2002, 18 August–12 October 2002, 20 October 2002–31 January 2003, 12 March–26 July 2003, and 31 August–28 November 2003. R. J. Tizard did so on 22 September–24 November 2001 and 3 April–4 June 2002.

[3] Taken from the 1: 200,000 Sovetskaia Armiia Generalnyi shtab map series prepared in the 1970s, except those marked^ which are taken from Tomek (2002).

[4] Latitude differs significantly from the 39°13'N given by Tomek (2002: 205). Because Tomek's other coordinates do not differ by an equivalent amount (hence do not reflect use of a different datum), this is assumed to be in error. This may explain her erroneous location of it as within Greater Pyongyang, whereas it in fact lies in South Pyongan province (as mapped by Fiebig 1993).

information must exist or at least have been amassed within the country, but neither Tomek nor I found much. The present collation treats the 28 species recorded for which Tomek traced fewer than six 'records', arbitrarily treating information from one site in one calendar year as one record, and that from a given site in multiple years as two records, and the 13 and eight additional species for which Tomek (1999, 2002) traced respectively no or only a single dated record post-1975. Some totals from Tomek have been amended by reference to primary sources, as noted in the species accounts below. Observations of species previously unrecorded for DPRK were covered by Duckworth (2004), and the status and seasonality of all other species will be dealt with elsewhere, where survey sites and effort will also be detailed. In addition, Scaly-sided Merganser *Mergus squamatus*, meeting criteria for inclusion here, was covered by Duckworth & Kim Chol (2005).

Observations were made between April 1999 and November 2004, the intensity increasing until 2003 (number of days with at least several hours observation: 14 in 1999; 60 in 2000; 137 plus two from R. J. Tizard in 2001; 219 plus 13 in 2002; 247 in 2003; and 52 in 2004). In Pyongyang observations covered all weeks of the year, and in Hyangsan most, excepting some of January and August and most of February, but coverage elsewhere, including Myohyang, was irregular. Birds were observed

with binoculars and, where appropriate, a telescope. Because of the lack of accessible extant bird specimens from DPRK and because many written sources on the country's birds contain significant inconsistencies and errors (see Tomek 1999, 2002), it seems essential to take the highest standards for DPRK sight records: the baseline understanding of the country's avifauna is still being developed and such records form an undesirably large proportion of it. Under current circumstances, difficulties of employing the superior alternatives of collection, trapping and photography seem almost insurmountable. Hence, square brackets are used here to indicate where specimen or at least photographic verification is particularly desirable. Systematics and nomenclature follow Inskipp *et al.* (1996). Spelling of Korean place names follows Tomek (1999, 2002) for sites included by her. Status comparisons are drawn extensively with well-watched Beidaihe, north-east China (e.g. Williams 2000), which at 39°47'N, 119°27'E, is at similar latitude to the survey sites, because this has the best-published recent detailed account of avifauna for any region close to DPRK. The following abbreviations are used: AMNH = American Museum of Natural History, New York; DPRK = Democratic People's Republic of Korea; MBR = migratory bird reserve; MCZ = Museum of Comparative Zoology, Cambridge, Massachusetts; NHM = The Natural History Museum, Tring (formerly BMNH); and USNM = United States National Museum, Washington DC.

BAIKAL TEAL *Anas formosa*

PYONGYANG: *Taedong*: single males, 23 February 2002 and 19–20 and 26 March 2004. *HYANGSAN*: male, Chongchon River, 30 March 2003. *OTHER*: *Anju bridge*: 100, 12 November, 12, 14 November 2003; 5+, 20 March, three, 22 March 2004. *Ryanggyo Reservoir*: 29, 31 October, 4+, 5 November 2002. *Mundok MBR*: Dongrim-ri: one, 25 March 2004. Soho-ri: two, 25 March 2004.

Suitable habitat was rarely visited and some may have been overlooked among Common Teals *A. crecca*, especially in autumn. Tomek (1999) traced nine localities, some with multiple dates, with the only post-1958 record in 1988 (Fiebig 1993). Additionally, NHM holds a specimen from Pyongyang collected on 31 March 1904 (R. Prŷs-Jones *in litt.* 2005). Two others attributed to Pyongyang, from *c.*1891, by BirdLife International (2001), came from C. W. Campbell (see Campbell 1892) and are labelled merely 'Korea'; a field label on one dates it as 15 November (R. Prŷs-Jones *in litt.* 2005, Shih-Wei Chang *in litt.* 2006, Y. Fujii *in litt.* 2006). Past DPRK records fell during 23 September–11 November, 14 December and 1–31 March (Tomek 1999), dates similar to the present records except the autumn arrival. Baikal Teal is presumably considerably more common in DPRK than hitherto recorded, especially as southern Korea supports a very high proportion of the world population (BirdLife International 2001), with more than 400,000 individuals present in recent winters (Bocharnikov & Gluschenko 2003, Moores 2005).

YELLOW-LEGGED BUTTONQUAIL *Turnix tanki*
HYANGSAN: one flushed from a half-acre bean field within a hotel garden plantation, 7 September 2002.

Little suitable habitat could be checked, hindering assessment of real status. Tomek (1999) traced only eight records, but omitted some information from Austin (1948): records at Anju on 10 September 1935 and 15 June 1936, and from Paekdusan in August, no year given. The most recent dated record is from 1959. Previous records include three in September (all from South Pyongan province: Austin 1948). Equally, Austin (1948) considered it uncommon, and Gore & Won Pyong-Oh (1971) traced few records from southern Korea, where it is now described as 'a scarce and skulking migrant' (Moores & Moores 2005).

GREY-CAPPED PYGMY WOODPECKER *Dendrocopos canicapillus*
HYANGSAN: singles, presumably the same bird, in small nearly mature pine *Pinus koraiensis* plantations on the edge of the town on [8, 14], 15 November 2002 and 26 January 2003.

There being no obvious reason why this woodpecker should be systematically overlooked, it must be genuinely extremely rare at the survey sites. Yet there are previous records from *c.*12 sites across DPRK, including outer Pyongyang, mostly pre-1950 with the most recent dated record being 7 February 1970 (Tomek 1999). Orii collected six at four Korean sites, mostly in the north, in 1929–30, against ten Japanese Pygmy Woodpeckers *D. kizuki* (Yamashina 1932), which are nowadays common, even abundant, in Korea (Tomek 1999, Lee *et al.* 2000; N. Moores *in litt.* 2003, own data). Similarly, in southern Korea, *D. canicapillus* is now considered scarce and is primarily found in old-growth broadleaf forest (N. Moores *in litt.* 2005), whereas previously it was more common. Jouy collected nine in and around Seoul in June–October 1883, but only two *D. kizuki* (Clark 1910); Campbell (1892) shot three in Seoul, and no *D. kizuki*. Austin (1948) presented a remarkable picture by today's standards: 'a not uncommon summer resident; a few winter in the central and southern provinces', based on dozens of records, particularly from Kyonggi province (which surrounds metropolitan Seoul). He personally 'encountered it only... just south of Suwon... first appeared 6 April... by the end of the month had become fairly common'. Yet he considered *D. kizuki* 'an uncommon resident in... central and southern... Korea', tracing fewer than half as many records as for *D. canicapillus*, suggesting a sight record might instead be a misidentified *D. canicapillus*, and himself seeing only one, 'during a marked flight of other woodpeckers, in which [*D.*] *canicapillus* was the most abundant species'. Austin lodged nine skins of *D. canicapillus* from Suwon in April 1946 at MCZ, and A. Pirie (*in litt.* 2005) has confirmed the identification. Similarly, Wolfe (1950) called it a 'not uncommon summer resident' in Kyonggi and western Kangwon provinces, arriving in early April. He did not record *D. kizuki*, but his sole small woodpecker held at USNM is correctly identified, as *D. c. doerriesi* (J. Dean *in litt.* 2005).

Macfarlane (1963) found *D. canicapillus* at four different sites around Seoul and in adjacent provinces, but apparently recorded no *D. kizuki*. Summing these records and their own unpublished observations, Gore & Won Pyong-Oh (1971) described *D. canicapillus* as 'uncommon', and alluded to many summer records. By contrast, M. P. Anderson's 1905–06 more geographically extensive collection from south and central Korea in NHM (see Anderson 1907) contains only one *D. canicapillus* (and three *D. kizuki*) (M. P. Adams *in litt.* 2004), and Bergman (1935) did not list the species for the Chuul Valley (41°23'N, 129°30'E), North Hamgyong province, despite listing five other woodpeckers, including *D. kizuki*; in his extensive travels in northern Korea (see Bergman 1938), he collected 12 of these and no *D. canicapillus* (P. G. P. Ericson *in litt.* 2003). These authors do not suggest former great abundance of Grey-capped Pygmy Woodpecker in Korea and it seems possible that the Seoul and Kyonggi area was formerly particularly suitable for it, influencing perceptions of those who spent most of their time there (Jouy, Campbell, Austin, Wolfe and Macfarlane); specimen evidence from four of these authors rejects the unlikely alternative, early collective misidentification of small woodpeckers. Because records came from eight (of 11) provinces in DPRK and five (of the seven) additional provinces in southern Korea (using Austin's 1948 boundaries) a significant decline in Korea can be inferred, where it now seems to be, as in the Russian Far East (Mikhailov & Shibnev 1998), a rare bird. The suggestion it was migratory (Austin 1948, Wolfe 1950) was not supported by Gore & Won Pyong-Oh (1971) nor by many years' migration studies at Beidaihe and nearby Happy Island (Williams 2000; J. Hornskov *in litt.* 2005), and even in the north of its range it is said to undertake only minor altitudinal movements, rather than migrations (Winkler & Christie 2002). Its DPRK localities share no obvious character of altitude or geographical location, and clarification of its current status is a priority.

EURASIAN EAGLE OWL *Bubo bubo*

[*HYANGSAN*: one atop a leafless trunk on the forested cliff south of the town at dusk, 20 March 2004. *MYOHYANG*: a very large owl flew past Nyungin-am crags near dusk, 22 May 2001]. *OTHER*: *Middle Chongchon river*, 42 km south of Hyangsan: one on a large cliff at 18.30 h on 20 April 2002.

In respect of the 2001 and 2004 sightings, Blakiston's Fish Owl *Ketupa blakistoni* (predicted to occur in Korea by e.g. BirdLife International 2001) could not be ruled out. Tomek (1999) traced 19 records from most provinces and months, but the only one post-1961 was in outer Pyongyang in 1988–89 (Fiebig 1993). Formerly a 'not uncommon' resident in Korea (Austin 1948), so frequent in the Seoul game-markets that Taczanowski (1888) and Campbell (1892) both called it common. Easy to overlook in general surveys (see Wolfe 1950), but whether this alone explains why recent DPRK records are so few is unclear; the species seems to have decreased in southern Korea, where it is now uncommon and localised (N. Moores *in litt.* 2005). Myohyang appears superficially prime habitat, but this owl has a diagnostic

territorial call given (in Europe and, apparently, in Korea) almost all year (Cramp 1985; N. Moores *in litt.* 2006) and is not confusable with any sounds heard on the many nights in Myohyang's forest. The species is reportedly extremely sensitive to human presence near the nest (Tucker & Heath 1994) and activity (mainly collection of plants) is intense throughout Myohyang in May–June. However, this seems unlikely to have driven it away, because it persists in the much smaller Ryongaksan (a renowned mountaineering park: Pang Hwan Ju 1987: 16) in outer Pyongyang (Fiebig 1993). Though largely resident, winter nomadism is considerable in Asian Russia (Cramp 1985) and may explain the above records of silent birds.

LITTLE OWL *Athene noctua*

Hyangsan: singles heard, [19 September 2002 (22.30 h), 23–24 October (05.50 h and 04.30 h), 25 November 2003 (06h50)], and 4 November 2004 (15.40 h). *Other*: *Middle Chongchon River*, road 42 km south of Hyangsan: one on a post by a large rocky precipice at *c.*15.30 h, 27 January 2001. *Mundok MBR*: Dongrim-ri: two singles on house chimneys and poles amidst paddy stubble, by day, 21 October 2004. *Anju*: singles seen, with much calling at dawn and dusk, 23–24 and 27 October 2004.

The paucity of records is noteworthy, because at least in the West Palearctic it is readily seen, being active day and night (Beaman & Madge 1998), and calls nearly all year (König *et al.* 1999). Apparently genuinely scarce, rather than simply more nocturnal and less vocal than in Europe, given the behaviour of the Mundok and Anju birds in autumn 2004. There was probably an influx in autumn 2004, because in southern Korea (where Gore & Won Pyong-Oh 1971 considered it a rare winter visitor based on three records, see Fennell 1960), it is still recorded only rarely, but there were four between 4 September and 13 October 2004 (Moores in press). The 12 previous DPRK records with locality come only from South Pyongan province (including Anju in November 1931) and southward; three are from Pyongyang or its outskirts, the last in 1959. Records are from all months except January, May, September and December, the most recent in 1962 (Tomek 1999). Another subsequent record is of a daytime single, in late July 2005, on a 6-m roadside post ('Seoul 70 km') just north of the Military Demarcation Line (J. Hammar *in litt.* 2005). Little Owl's current status is therefore enigmatic, perhaps a scarce resident with irregular autumn arrivals. Apparently resident at Beidaihe (Williams 2000; J. Hornskov *in litt.* 2005).

LONG-EARED OWL *Asio otus*

Pyongyang: *Munsu*: one in a clump of pines *Pinus densiflora* at 08.00 h, 21 November 2002.

This bird, presumably a transient attempting to roost, was readily flushed. Most autumn records at Beidaihe are from day-roosts (Williams *et al.* 1992), but the Pyongyang and Hyangsan survey sites sustained such heavy human use as to deter roosting birds. However, could well have been overlooked in Myohyang, as is easily

missed on both breeding and winter grounds (Lack 1986, Gibbons *et al.* 1993). Tomek (1999) traced *c.*12 records, the last (apart from a generalised statement of winter occurrence) from 1958, including several in autumn. Her unqualified citation of a 1987 record relates to pellets, the identification marked '?' in Głowaciński *et al.* (1989: 471), making the April date meaningless. The scarcity of recent records might simply reflect birds being overlooked; but it could indicate a decline, because there are similarly few recent, but relatively many historical, records in southern Korea (Park Jin-Young 2002), and numbers passing through Beidaihe appear to have decreased (Williams & Dorner 1991, Williams *et al.* 1992).

SHORT-EARED OWL *Asio flammeus*

[*OTHER*: *Sogam dam*: one, 6 January 2003. 8 km north of *Ryanggyo Reservoir*: one, 6 January 2003. 3 km south of *Anju Bridge*: one, 21 January 2003]. All seen from a car at dusk around extensive stubble fields, recalling Wolfe's (1950) observations in southern Korea. Clearly *Asio* sp., none was seen well enough to eliminate Long-eared Owl, though this is most unlikely in such habitat.

The route between Pyongyang and Hyangsan crosses many small plains which, judging from the many Common Kestrels *Falco tinnunculus* and Common Buzzards *Buteo buteo*, support ample food for this conspicuous owl. The journey was frequently made by day and around dusk (this owl's peak activity periods; Beaman & Madge 1998), so it must be genuinely scarce in the region. Tomek (1999) traced only seven records, all between late September and April (but none in January), reflecting Taczanowski's (1888) view that only a few are seen in a typical winter. This contrasts with Gore & Won Pyong-Oh's (1971) assessment for southern Korea of a 'common winter visitor to . . . open country in the lowlands and foothills', though now it is a decreasing, uncommon, localised winter visitor and passage migrant (N. Moores *in litt.* 2005).

SOLITARY SNIPE *Gallinago solitaria*

MYOHYANG: one in rocky, well-vegetated, sections of the Hyangam-chon, 24 March and 8 April 2003.

Found only by clambering in the streambed, which was done on only two other dates within its presumed period of occurrence. Thus, the species may have been greatly overlooked, as perhaps it is across Korea: Tomek (1999) traced just eight records, only one (1978) post-1969; and only one regularly occupied site is known in southern Korea (N. Moores *in litt.* 2005). Unlike other Korean snipes, it inhabits rocky streams and mountain ditches (Fennell & King 1964), though the 1978 record was of a bird 'on the shore of a small lake' (Bocheński *et al.* 1981), and Myohyang may be prime habitat. DPRK records fall between 11 October and 23 April, implying that it is a non-breeding visitor; equally, N. Moores (*in litt.* 2005) knows of no summer records for southern Korea.

GREY-HEADED LAPWING *Vanellus cinereus*
HYANGSAN: one near the Chongchon River, 28 April 2003.

The only previous DPRK record may be from South Hamgyong province on 16 September 1989 (Fiebig 1993), though Tomek (1999) traced an additional, unreferenced, allusion to occurrence in DPRK. Very scarce in southern Korea (Gore & Won Pyong-Oh 1971, Park Jin-Young 2002, Moores in press). Surprisingly few DPRK records, given its abundance at Beidaihe (Williams 1986, 2000), but the species is sufficiently conspicuous that it must be genuinely rare in the survey sites.

ORIENTAL PRATINCOLE *Glareola maldivarum*
PYONGYANG: *Moran*: three flew low north-east, 30 April 2002.

Were it at all regular at the survey sites, more flyovers would surely have been noted. Tomek (1999) traced just one previous record, from Anju on 7 or 17 October 1931. Gore & Won Pyong-Oh (1971) considered it a mere vagrant to southern Korea, but though undoubtedly scarce (Lee *et al.* 2000), it is increasing and may now breed (Moores & Moores 2005), reflecting recent trends in Japan (Brazil 1991). My record falls within the peak passage period through southern Korea (N. Moores *in litt.* 2005) and Beidaihe, where it is much more numerous (mid April–early May: Williams *et al.* 1986, Williams 1986, 2000).

SLATY-BACKED GULL *Larus schistisagus*
OTHER: *Mundok MBR*: Dongrim-ri: two on tidal flats, 2 April 2003.

Tomek (1999) traced records from only four sites. In addition, already known from near Mundok, in a sea bay west of Anju, on 25 November 1989 (Stepanyan 1998). One record, an adult on the Taedong River, near the mouth of the Sunhwa River, in outer (west) Pyongyang on 16 April 1987 (Głowaciński *et al.* 1989), is open to doubt: the original publication does not discuss variation within 'Herring Gull *L. argentatus*', notably that a dark-backed, pink-legged, taxon (not Slaty-backed Gull) visits Pyongyang in March–April (pers. obs.). Moreover, Burger & Gochfeld (1996) did not mention inland occurrence, in Japan it is 'rare on inland waters' (Brazil 1991) and N. Moores (*in litt.* 2005) knows of no such records in southern Korea. Occurrence in Pyongyang would thus be unexpected, and Malling Olsen & Larsson (2004) must have mapped all inland Korea in the species' winter range in error. There is only one previous spring record from DPRK, on 11 April 1996, but the species is probably greatly under-recorded, as suggested by Tomek (1999). Austin (1948) listed no records for Korea, and Gore & Won Pyong-Oh (1971) called it a regular, scarce, winter visitor, but in southern Korea it is now 'fairly numerous in October-March' (Moores & Moores 2005). Whether it has genuinely increased or was simply overlooked is unknown, given the difficulties in gull identification; Brazil (1991) left the causes open of a similar trend in observed numbers in Japan, whilst Carey *et al.* (2001) attributed an upsurge in numbers recorded in Hong Kong to reflect nothing more than evolving identification skills.

BLACK-LEGGED KITTIWAKE *Rissa tridactyla*
PYONGYANG: *Taedong*: low-flying adult, not on active passage, 10 October 2002. *HYANGSAN*: low-flying adult, 4 November 2004, eventually landed on the Chongchon River; seemed exhausted.

Tomek (1999) traced five previous records, from three east-coast sites, between 25 September and 11 December, with one on 11 February (her '18 September 1989' was actually 18 October 1989; Fiebig 1993). Gore & Won Pyong-Oh (1971) listed no inland records from southern Korea, and N. Moores (*in litt.* 2005) knows of none, but these records lend tentative support to his suggestion (Moores in press) that birds cross Korea overland. In most of its range the species is exceptional inland except after storms (Cramp & Simmons 1983), but both my records were during calm conditions. Presumably much overlooked off the coast because in southern Korea it is 'a fairly common migrant and winter visitor' (Moores & Moores 2005).

WHITE-WINGED TERN *Chlidonias leucopterus*
[*HYANGSAN*: one, 3 October 2002. *OTHER*: *Anju bridge*: juvenile foraging, 19–20 September 2002.] Clearly *Chlidonias* sp., neither was quite confirmed to species; there is only one record of Whiskered Tern *C. hybridus* in DPRK (Duckworth 2004).

Tomek (1999) traced six DPRK records, all in the 1980s, from two coastal and one inland site, spanning 6 July–3 October; her deduction that July and August records suggest breeding in DPRK ignores that 'countless' birds pass Beidaihe (where the species does not breed) by late June (Williams *et al.* 1992). Though Austin (1948) mentioned only one record, it is better considered rare or uncommon in southern Korea (Park Jin-Young 2002, Moores & Moores 2005), with recent records mostly in May–September (N. Moores *in litt.* 2005).

MARBLED MURRELET *Brachyramphus marmoratus*
HYANGSAN: one on the Chongchon River, 14 May 2002, in partial breeding plumage, photographed by R. J. Tizard.

This individual was of *B. m. perdix*, now more generally regarded as a separate species (e.g. Friesen *et al.* 1996), and 'one of the rarest and most poorly understood alcids in Asia' (Nelson *et al.* 2002). The only previous records are a specimen (also *B. m. perdix*) lacking any data, and one from the Taedong River (no precise site) dated 13 June 1933 (Austin 1948, Tomek 1999). Though recorded almost annually in southern Korea, it is only noted in tiny numbers (Fennell & King 1963b, Park Jin-Young 2002, Moores & Moores 2005). Marbled Murrelet breeds inland, in old-growth forests (Ralph *et al.* 1995), and it might seem possible this bird was heading to Korean forest to breed, given the unsupported reference by Austin & Kuroda (1953: 457) to 'the Korean [breeding] population', but the nearest known breeding areas are in the Russian Far East (Konyukhov & Kitaysky 1995). However, given the great difficulties in finding this species (Nelson *et al.* 1997) Korean breeding cannot be excluded.

ORIENTAL HONEY-BUZZARD *Pernis ptilorhyncus*
PYONGYANG: *Munsu*: singles south, 9 October 2001 and 22 September 2002. [*Taedong*: one west, 23 September 2001.] *HYANGSAN*: one, not on active migration, 4 May 2003; 1–2 south-west, 3 October 2003. *MYOHYANG*: *Wonman*: singles, [9 and] 12 June 2002; 21 south-east, 6 May 2003. *Hyangam-chon*: one, not on active migration, 8 May 2003.

Western Honey-buzzard *P. apivorus* was not objectively eliminated from these sightings; it might conceivably occur as a vagrant to north-east Asia. Few unidentified large raptors were seen, hence this honey-buzzard must be genuinely uncommon at the survey sites. Nonetheless, Tomek's (1999) classification as a 'very rare passage migrant' is too strong; in southern Korea it is a locally common passage migrant (e.g. Moores in press). That Tomek (1999) traced only three passage records (and overlooked another: Fiebig 1993), including outer Pyongyang, probably reflects the limited efforts to detect passage raptors in DPRK. A satellite-tagged Japanese breeder migrated over the entire latitudinal span of the Korean peninsula in early to mid May 2004, and a large such migration was hypothesised (Higuchi *et al.* 2005). A single circling near Wonman, Myohyang, on 11 June 1983 (Tomek 1985) coupled with presence there in mid-June 2002 might suggest local breeding, but the conspicuous aerial display was given by neither bird (T. Tomek *in litt.* 2005), and presumed non-breeders of the allied Western Honey-buzzard migrate into early July (Cramp & Simmons 1979); first-year *P. ptilorhyncus* may even oversummer in tropical South-East Asia (Higuchi *et al.* 2005) and it seems that few young birds return as far as the breeding areas, at least in Japan (Iseki 2004). The timing of past (12–29 September: Tomek 1999) and present passage records resembles that at Beidaihe, where in spring 1985 large numbers passed in late April–late May (Williams 1986, 2000); autumn passage in 1987 peaked very strongly in late September, with otherwise few between mid September and the first third of October (Duff *et al.* 2000).

CINEREOUS VULTURE *Aegypius monachus*
HYANGSAN: eight circled overhead then headed up the *Hyangam-chon*, *MYOHYANG*, 8 November 2002.

Tomek (1999) traced just one recent record, a single near Pyongyang on 13 April 1989 (Fiebig 1993); also, three near Haeju, South Hwanghae province, on 30 November 1989 (Stepanyan 1998). Tomek (1999) gave three other dated records: 8 August 1929 (Yamashina 1941, 873; omitted, presumably accidentally, from Yamashina 1932, the original expedition account, discounting the remote possibility this bird was collected by someone other than Orii), 25 November 1928 and 15 December 1918 (not 1818; see Austin 1948). The past August record is echoed by recent summer records from southern Korea (e.g. Moores in press). Cinereous Vulture is doubtless more frequent than records indicate: in March 2003 Pyongyang Central Zoo held five birds, all reportedly locally taken, and 1,000–1,200 winter in

southern Korea, many in or near the Military Demarcation Line (Lee *et al.* 2004): presumably, all these overfly DPRK.

EURASIAN MARSH HARRIER *Circus aeruginosus*
[*PYONGYANG*: *Moran*: one south, 8 September 2002. *OTHER*: *Anju bridge*: singles foraging, 25 May 2002 and 3 September 2003].

In southern Korea Marsh Harrier visits mainly coastal marshes, being only occasional inland (Gore & Won Pyong-Oh 1971): the survey sites lacked prime habitat, even taking into account wider habitat usage elsewhere in its range (Ferguson-Lees & Christie 2001). At best it is scarce on passage. Tomek (1999) traced only a few previous DPRK records, none recent: one specimen, Ryongampho, 21 April 1929 (Yamashina 1932); 8 July 1897; and three specimens, Manpo, 13 September–12 October 1929 (Yamashina 1932), but she (and Austin 1948) overlooked one from 'Nojido' (untraced; east of Paekdu-san), 24 August 1929 (Yamashina 1932). Some dates suggest local breeding, though this is unknown in southern Korea (N. Moores *in litt.* 2005). Formerly 'uncommon' (Austin 1948), it is now scarce in southern Korea (e.g. Moores in press), and has decreased as have wintering populations in Thailand (Round & Gardner in press) and, probably, Hong Kong (Carey *et al.* 2001), and passage numbers through Beidaihe (Williams & Dorner 1991). Hence, clarification of its true status in DPRK is desirable, and these sightings, none of adult males, are considered provisional.

RED-NECKED GREBE *Podiceps grisegena*
HYANGSAN: one on the Chongchon River, 5 October 2001.

Tomek (1999) traced only five records (three sites), including one from Hyangsan (not Myohyang; Fiebig 1993), 10–12 May 1990; only one was in autumn (1 October; Fiebig 1993). Additionally, several were at Samil-pho, Kangwon province, November 1989 (Stepanyan 1998). Though uncommon in southern Korea (Austin 1948), it can be locally numerous on the coast with, e.g., over 100 seen in one day on the east coast near Pohang (*c.*35°55'N, 129°25'E) in March 2005 (Fennell & King 1963b, Macfarlane 1963; N. Moores *in litt.* 2005), but regular occurrence at the (inland) survey sites would be surprising.

PURPLE HERON *Ardea purpurea*
PYONGYANG: [*Munsu*: one flew past, 2 May 2002.] *Taedong*: one north, 30 April 2002, with a Grey Heron *A. cinerea*; [six herons north, 19 April 2003, were possibly this species].

Various migrating large herons were too high to identify. Tomek (1999) traced six previous pre-1932 records and one in 1985, whilst Gore & Won Pyong-Oh (1971) listed only 15 Korean records; it is still considered scarce in southern Korea (Lee *et al.* 2000; N. Moores *in litt.* 2005).

INTERMEDIATE EGRET *Mesophoyx intermedia*
Pyongyang: [*Moran*: singles over, with Great Egrets *Casmerodius albus*, 31 August 2002 and 31 August 2003.] *Taedong*: one over, with Great Egrets, 3 May 2003. *Other*: *Anju bridge*: singles, 19 September 2002 and 3 September 2003. *Ryanggyo Reservoir*: three, 26 April 2003, and one with other egrets, 22 September 2003. *Sinchon*: seven, 9 September 2002. *Panmunjom*: 10+, 13 July 2003.

Especially given comments on egret identification by Tomek (1999), who accepted only two records from DPRK (specimens, 26 May 1970 and 3 July 1965), Intermediate Egrets were identified only when seen well, usually in direct comparison with Great Egret (probably mostly or all *C. a. modestus*) and/or Little Egret *Egretta garzetta*, showing a shorter, thicker bill than Great Egret, and a longer neck than Cattle Egret *Bubulcus ibis*. Most egrets were seen in flight or from a moving car, hence many were not identified and Intermediate Egret was probably much overlooked. It is clearly regular on passage through the general survey area (extreme dates, 26 April–3 May and 31 August–22 September). Despite Tomek's (1999) caution (partly because the Great Egrets predominating in Korea, *C. a. modestus*, are markedly smaller than *C. a. albus*, likely to be more familiar to European observers), at least Fiebig's (1993) observations seem correct (some were mixed with other egrets); his seven records extend autumn presence until 19 October. The 10+, possibly many more, birds in breeding plumage (and bill pattern) at Panmunjom in midsummer, coupled with many seen there the following summer (late July 2005; J. Hammar *in litt.* 2005), and Fiebig's (1993) eight South Pyongan province birds on 29 June 1990, support Tomek's (1999) proposition of DPRK breeding. This has been known in southern Korea since the 1960s (Gore & Won Pyong-Oh 1971); indeed, Kuroda (1918) described it as a common summer resident in central Korea, a statement dismissed by Austin (1948), who considered it 'of uncertain status . . . later observations may show localized breeding colonies in Korea'. Common occurrence in DPRK is expected: small numbers summer in the coastal Russian Far East (Nazarov *et al.* 2001), and it is common in southern Korea, particularly in rice fields, with birds almost all gone by September; a very few linger into early Novermber (N. Moores *in litt.* 2004). Birds also disappear from Beidaihe by late September (Duff *et al.* 2000). In this context, Stepanyan's (1998) reported groups of two at two sites in the Haeju area, South Hwanghae province, on 30 November–1 December 1989 are very late, and it is noteworthy that he did not list Great Egret (scarce but regular in southern DPRK throughout the winter; Tomek 1999). There remains a clear need for careful documentation of Intermediate Egret records at any season in DPRK.

BLACK-CROWNED NIGHT HERON *Nycticorax nycticorax*
Pyongyang: *Moran*: first-summer, 13 April 2002, second-summer, 10 May 2003. *Munsu*: singles, 21 September 2001 (adult), 14–15 April 2002 (first-summer); three, 4 May 2002; singles, 29 December 2002 (first-winter), 2 May, 9, [12] September and 20 October 2003 (first-winter). *Taedong*: singles, 10 October 2002 (first-

winter), 25 July, [11 September], 27 September, 2 November 2003 (adult). *Other*: one over the Museum of the Three Revolutions (39°05'N, 125°45'E), 4 May 2002. *Other*: *Ryonggang hot springs*: at least 27 at dusk, 30 October 2004; birds heard the following morning before dawn.

An even more recent record is of three leaving a day-roost just north of Kaesong city, flying over the main Pyongyang road (*c.*38°00'N, 126°33'E) in late July 2005 (J. Hammar *in litt.* 2005). Tracing only two previous records (Kyongsong, North Hamgyong province, 1925 [Austin 1948]; Anju, 6 March 1931), Tomek (1999) classed Black-crowned Night Heron as a vagrant. This is such a distinctive species that it must genuinely have increased in DPRK since the relatively high levels of observation in the 1980s, when none was found. It is mainly crepuscular, roosting by day in tree-crowns whence, given the heavy human activity in Pyongyang parks, it was readily flushed. The species was probably not, therefore, greatly overlooked. Expansion into DPRK continues the southern Korean trend. Kuroda (1918) commented how 'remarkable that *Nycticorax nycticorax* has never yet been collected in the peninsula of Korea but has been obtained on the island of Quelpart' (=Cheju, *c.*33°20'N). There were three records by 1964 (Austin 1948, Fennell 1961, Gore & Won Pyong-Oh 1971) and now it inhabits most riverine areas, having bred since, at latest, the 1980s (Park Jin-Young 2002); some colonies number hundreds (Yu Jae-Pyoung & Hahm Kyu-Hwang 1997), and it is considered common (Lee *et al.* 2000). Won Pyong Oh (1995) discovered several pairs (total counts of 19–43 birds, with juveniles) breeding on Yu-do islet at the mouth of the Han River, just south of the Military Demarcation Line, in July 1994. It has also colonised Beidaihe: in spring 1985, only three were recorded (Williams 1986) and it was not seen in autumns 1986–1990 (Williams 2000), but the species is now a common breeding summer visitor (J. Hornskov *in litt.* 2005).

Currently mainly a passage migrant in Pyongyang (extreme dates 13 April–10 May, 9 September–2 November), there were midsummer (25 July) and midwinter (29 December) records. At Beidaihe, most leave by early October (J. Hornskov *in litt.* 2005). Similarly, most have departed southern Korea by mid October, but the species also winters in small numbers, including in the coldest lowland parts (N. Moores *in litt.* 2005). Summer records do not necessarily indicate local breeding: in Europe, post-breeding dispersal in July–August takes juveniles in all directions, mostly north and west, for up to 800 km, with one recovery 1,200 km distant; this dispersal merges into true autumn migration which runs through September–October. Not all migrate and there are occasional winter records in Europe even north of the breeding range. There is a tendency for returning spring migrants to overshoot; most such birds in Britain are in March–May (Fasola & Hafner 1997). A similar pattern could explain the Pyongyang records, the spring records being rather later, reflecting the harsher early spring climate. Continuing increase in DPRK and colonisation of Pyongyang (it adapts well to human settlements; Cramp & Simmons 1977) seems likely, especially as small numbers summer in the coastal Russian Far East (Nazarov *et al.* 2001).

RED-THROATED LOON *Gavia stellata*
HYANGSAN: singles, Chongchon River, 20 May 2002 (non-breeding plumage) and 13–17 June 2002 (breeding plumage).

Tomek (1999) traced only five records (from four sites), only one (in 1970) post-1932. Records, presumably on the lower Chongchon, at Anju on 22 May 1931 and 18 June (or 18 November?) 1932 parallel remarkably the 2002 records. In southern Korea, it can be fairly numerous (Macfarlane 1963; N. Moores *in litt.* 2004), making the lack of other recent DPRK records by e.g. Fiebig (1993, who had ready access to the coast) surprising, and Tomek (1999)'s categorisation of it as a vagrant is surely unwarranted.

YELLOW-BILLED LOON *Gavia adamsii*
HYANGSAN: one, in full breeding plumage, Chongchon River, 27–28 May 2003.

The only historical record (Tomek 1999), from Kangwon province on 7 April 1914, has a precise locality of 'Soondal-myon' in Gore & Won Pyong-Oh (1971), who listed it as a southern Korean record, and of 'Juntatsumen, Tsūsen [=Kuum], Kōgen District [=Kangwon]' in Kuroda (1918). Kuum (38°54'N, 127°54'E) is *c.*50 km north of the Military Demarcation Line, so the collecting locality is presumably well within DPRK. There are also only few records from southern Korea, but potential sites are still only very patchily surveyed (Fennell 1952, Gore & Won Pyong-Oh 1971, Moores in press). Recent satellite-tracking of North American breeders suggests that, despite the paucity of records, DPRK supports a significant wintering population: of five individuals marked in summer 2002, two wintered in DPRK's East Sea and one crossed the peninsula to winter in the West Sea (Earnst 2004).

JAPANESE WAXWING *Bombycilla japonica*
PYONGYANG: *Moran*: six, 18 November 2001; 4+, potentially 30, 22 March, eight, 19 April, one, 22 November 2003. *Munsu*: 14, 20 March 2004. *Taedong*: 35, 22 March, 45, 26 March, 15, 28 March, [12, 10 April], 14–29, 15 April, 35, 25 April, one, 18 May 2003; one, 24 February, [13 March] 2004. *Diplomatic Compound*: one, 19 May 2003, [1+, 28 February 2004].

Tomek (2002) categorised this species as a 'very rare winter visitor and passage migrant', tracing only five dated records (from two sites), none post-1962, with a general statement of occurrence in Pyongyang in winter. It is unclear whether the species has increased recently, or was simply overlooked previously. The 2001–04 records number only two in autumn; amongst nine records Austin (1948) listed, eight were from spring with one on 17 January 1916. The species may genuinely be scarce in autumn in Korea, rarely reaching southern Korea before December (Moores in press). Traditionally, Bohemian Waxwing *B. garrulus* is thought more common in Korea (Austin 1948, Gore & Won Pyong-Oh 1971) but, apart from an invasion in spring 2004, I saw it only thrice, in spring 2003 (when Japanese was common); equally, N. Moores (*in litt.* 2005) considers this comparison no longer apt

for southern Korea, and at Beidaihe in recent autumns, Japanese Waxwing was also rather the commoner (Williams 2000). In most years, it is scarce at the survey sites, with only four records outside the influxes of 22 March–25 April 2003 and 24 February–20 March 2004 (only the last date in 2003 may be a reliable guide to timing, because I was away before/after the others). It is also an irruptive visitor to Japan (Brazil 1991) and southern Korea (Moores & Moores 2005). The two records bracketed from spring 2004 were of calls, identical to the common piping whistle of Japanese Waxwing, heard from Bohemian Waxwing flocks; this call seems not to be given by Bohemian Waxwing (pers. obs; N. Moores *in litt.* 2004). Mixed flocks, usually with one species much outnumbering the other, were frequent, as in southern Korea (N. Moores *in litt.* 2005) and Japan (Brazil 1991).

BROWN-HEADED THRUSH *Turdus chrysolaus*

[*PYONGYANG*: *Moran*: singles showing some characters of the species, 2 May 1999 and 18 October 2003. *Taedong*: one showing some characters of the species, in subsong, 3 May 1999.]

Though resembling Brown-headed Thrush, all had at least one character not shown by that species at NHM (*c.*70 Brown-headed Thrush specimens examined, compared with *c.*50 Eyebrowed Thrushes *T. obscurus* from China and 28 from Siberia, with superficial examination (for strength of supercilium) of all *c.*160 others in the collection). Pale *T. pallidus* and Eyebrowed Thrushes also occurred on passage, and few were seen well: other such anomalous birds, and even Brown-headed Thrushes, may well have been overlooked.

That on 2 May 1999 had uniform slate brown upperparts, smeary pale brown throat and breast, a strong chestnut malar stripe, a slight hint of a supercilium, rich orange flanks, pale pink legs and yellow bill. Hence, it superficially resembled a female Brown-headed Thrush, except that 'slate brown' is not a good description of the upperparts of any NHM female-type of either species. Whilst it might have been a flawed assessment, more likely is that the bird was a young male (it was in subsong) and this colour would have strengthened with age. The throat and breast pattern, including the dark malar (shown by *c.*30–50% of NHM female-type specimens of Brown-headed Thrush, and in general more prominent on Eyebrowed Thrush) apparently eliminates Grey-backed Thrush *T hortulorum* (a common breeder in Moran; own data), whilst the only weak head striping would seem to rule out Eyebrowed Thrush. Moreover, no NHM specimen of Eyebrowed Thrush has an entirely dark throat and chin, and those with the smallest pale patch there are those with the most slaty throats, and hence not similar to the 1999 bird.

The bird on 3 May 1999 matched a dull male Brown-headed Thrush in almost all features (warm brown head and upperparts, slightly greyer throat with no trace of pale, rich orange flanks and breast, white belly and vent, yellow bill with dark tip, pink legs), but it had a weak white supercilium terminating just behind the eye, and an even weaker pale suffusion from the bill base to below the eye, features suggesting Eyebrowed Thrush, at least in parentage. Many NHM Brown-headed

Thrushes have at least a hint of a supercilium, though neither clean white, nor sharply delimited. However, no adult male type (i.e. with a uniform dark throat) showed any such supercilium. The head stripe features are consistent with Eyebrowed Thrush, but the rest of the plumage is not.

These two resembled Brown-headed Thrush much more than they did Eyebrowed Thrush. Given the lack of any specimen at NHM similar to either in essential features, they must be left unidentified. Moreover, certain specimens at NHM were also hard to identify (e.g. NHM 96.6.1.1965, Okinawa, Japan, 3 April 1892; NHM 1910.5.2.381, Kwang Tung, south China, 8 April 1906; NHM 1909.10.29.17, central Taiwan, April 1908). Finally, a third bird in Pyongyang, on 18 October 2003, was extraordinary: a first-winter (with a prominent greater covert bar), it had a head pattern typical of Eyebrowed Thrush, except that it lacked even a trace of a supercilium. The spot just below and before the eye and submoustachial stripe were both clearly demarcated, bold white. The fulvous-orange flanks were typical of Eyebrowed Thrush, and lacked the richer hue of Brown-headed Thrush. Several NHM Brown-headed Thrushes (e.g. 1918.6.25.158, Fohkien, south China, no date) show limited pale, in one case white, flecking below the eye and/or a pale submoustachial, but none has the bold white markings typical of Eyebrowed Thrush; and no specimen of either species showed this combination of no supercilium with bold white marks below the eye. The closest, 1914.7.16.106 (Shawaishan, Kiangsu, 15 November 1904), had only a limited white submoustachial and a clear supercilium before the eye.

Brown-headed, Eyebrowed and Pale Thrushes are sometimes considered conspecific (e.g. Cheng 1987), and it is unclear whether the anomalous features result from hybridisation or wider intraspecific variation than shown at NHM. Clearly, great care is needed in identifying any suspected Brown-headed Thrush in DPRK. Unfortunately, before checking skins, I supplied the 1999 records (with no identification caveat) to Tomek (2002).

Tomek (2002) traced five previous DPRK records, including outer Pyongyang (4 May 1950) and Myohyang (singles seen 14 June and heard 17 June 1983, in different valleys; Tomek 1985). Tomek (2002) took the Myohyang records, and three on 21–27 May from elsewhere, to imply local breeding, otherwise known only from Japan, Sakhalin and the Kurile Islands (Clement & Hathway 2000). Hence, I searched very hard for breeding-season Brown-headed Thrush in Myohyang, including Tomek's precise valleys of observation, but found only Pale and Grey-backed Thrushes. *Turdus* within Myohyang's forest were difficult to see clearly, and to some people (including me) vocalisations of Brown-headed Thrush closely resemble those of several congeners (e.g. Ueda 1998). It is possible that I overlooked Brown-headed Thrush there in 2000–03, but the species certainly was not common. It is notable that Tomek (1985) found no Pale Thrushes in Myohyang, though this species was numerous in 1999–2003, and was earlier recorded by Fiebig (1995). Therefore, further confirmation is essential before Brown-headed Thrush can be considered a Korean breeder. In southern Korea it was treated as a vagrant

by Gore & Won Pyong-Oh (1971), but it is better considered a 'rare or uncommon migrant' (Park Jin-Young 2002), especially in spring, and indeed falls of dozens, hundreds even, have occurred on southern islands (N. Moores *in litt.* 2004).

NARCISSUS FLYCATCHER *Ficedula narcissina*

OTHER: *Kuwol*: male, 11 April 1999, near a stream in mixed pine/broadleaf forest (*c.*200 m altitude).

Even though the rather similar Yellow-rumped Flycatcher *F. zanthopygia* was common in Pyongyang, careful checking makes it unlikely that Narcissus Flycatcher was greatly overlooked at the survey sites; it must be at best scarce. Tomek (2002) traced only four previous records from DPRK: 15 May 1950, 12 May 1961, 12 June 1949, and, from Myohyang, 12 May 1950. Additionally, single males were collected on Yang-do on 17 and 18 May 1953 (Neff 1956, reconfirmed as *F. n. narcissina* by J. Stephenson *in litt.* 2006). These are all much later in spring than the Kuwol record, but a southern Korean specimen is dated comparably: 9 April 1931 (Austin 1948), as are various modern records (N. Moores *in litt.* 2005). The June date might suggest breeding (see Tomek 2002), and there are a few similar records from southern Korea but so far no direct indication of breeding (Park Jin-Young 2002), so it was presumably just a late or disoriented migrant. Although Austin (1948) traced only eight Korean records, it is now considered a scarce migrant in southern Korea, primarily in the extreme south and mainly in spring (Park Jin-Young 2002), with day counts of up to 40 at favoured sites (N. Moores *in litt.* 2003).

JAPANESE ROBIN *Erithacus akahige*

OTHER: *Kuwol*: two, 11 April, male, 12 April 1999; sites *c.*6 km apart. Birds foraged in undergrowth and on large rocks beside small streams at *c.*200 m.

This robin is 'very secretive' (Straw 1953, Brazil 1991), but its song is highly distinctive (Ueda 1998), and hence some silent passage birds, though not breeding-season songsters, could have been overlooked. Only one previous record from DPRK, from Ryonggang province, 4 June 1980 (Tomek 1984, T. Tomek *in litt.* 2005), the date *contra* Tomek (2002) where 1–6 June was given. Tomek (1984) saw the date as suggesting breeding, but there has been no subsequent evidence, and the 1999 dates reflect those of southern Korean passage migrants (Straw 1953, Moores in press). It was described as a rare vagrant in southern Korea by Gore & Won Pyong-Oh (1971), but is better considered a scarce migrant with, e.g. four records in 2004 (Moores & Moores 2005).

SIBERIAN RUBYTHROAT *Luscinia calliope*

PYONGYANG: *Taedong*: one, 28 September, 3+, 5 October, two, 10 October, singles, [14], 19 and 21 October 2003. *MYOHYANG*: *Wonman–Piro area*: common, 5–6 May

2003; small numbers, 9, 12 June 2002 (song not then known), common, 1–5 July 2002; three, including one juvenile, 28 August 2002.

Clearly a common breeder (several songsters audible from any given spot, May–July) in dense scrub at 1,700–1,909 m in Myohyang, Siberian Rubythroat was seen in autumn 2003 on every visit over several weeks, except one (12 October), to an area of bushes and damp rank growth (not previously checked carefully) on Rungra islet, Pyongyang; I had presumably overlooked it in earlier seasons. Tomek (2002) traced DPRK records from *c.*18 localities (overlooking Bergman's (1938) from the untraced locality of 'Gekatsuri', South Hamgyong province, in summer 1935), including Myohyang (22 May 1956); only one record (in 1980) was post-1969. She called it a 'rare breeding species and passage migrant'. However, it can be very skulking (Lewington *et al.* 1991) and is easily overlooked if the call is unknown (Brazil 1991); notably, the 1980 record was identified only by characteristics of the nest, the bird being seen so poorly (Tomek 1984). In fact, if Myohyang typifies Korea's northern highlands, it must be an abundant breeder, and, moreover, it is locally common on passage, as in southern Korea (e.g. Moores in press). It also seems to be a previously overlooked breeder to the south: Park Jong-Gil (in Park Jin-Young 2002) found territorial males on Sorak mountain (38°10'N, 128°30'E) in June–July 2001. Gore & Won Pyong-Oh (1971) gave passage habitat as 'wherever there is dense cover', but it is evidently quite selective in at least Pyongyang, and modern southern Korean records are predominantly from reeds or long grass with low bushes (N. Moores *in litt.* 2005). Past records span 25 April–18 August and 11–20 October (Tomek 2002), a similar autumn departure to that in 2003, and resembling autumn timing at Beidaihe: mid–late September, peaking in early October, with a few to early November (Duff *et al.* 2000).

BLUETHROAT *Luscinia svecica*
Other: *Mundok MBR*: Namei-ri: one in coastal reed swamp, 24 October 2004.

Passage Bluethroats seek well-vegetated damp areas, to which I had little access. Could well be much commoner than the sole previous record traced by Tomek (2002) implies, and her conclusion that migrating Bluethroats bypass the Korean peninsula is premature. Though Austin (1948) traced only one record in southern Korea, Fennell & King (1964), by appropriate searching found Bluethroats regularly around Seoul, and today in southern Korea it is considered 'scarce or uncommon' (Park Jin-Young 2002). The above date fits timing at Beidaihe (late September–late October, with most passing by mid October; Duff *et al.* 2000), and Fennell & King's (1964) dates (24 October–10 November).

CHESTNUT-CHEEKED STARLING *Sturnus philippensis*
Hyangsan: male in riverside willows *Salix* sp., 26 May 2002.

The only previous dated locality record in DPRK is from 15 October 1927 (Austin 1948); there are also 1–2 old, questionable reports (Tomek 2002). Formerly

considered 'very rare' in southern Korea (Gore & Won Pyong-Oh 1971), but now known to occur regularly (Park Jin-Young 2002). The difficulty of checking starling flocks in Pyongyang (Duckworth 2004) means this species could easily have been overlooked, if it occurs. The above date reflects that birds may remain in the winter range (Philippines) into late April, and do not begin to arrive in the northernmost breeding area (Sakhalin) until late May (Feare & Craig 1998).

COMMON STARLING *Sturnus vulgaris*
OTHER: *Mundok MBR*: Dongrim-ri: one in paddy stubble with a small flock of White-cheeked Starlings *S. cineraceus*, 22 October 2004.

The difficulty of checking starling flocks in Pyongyang means this species could easily have been overlooked. The sole previous record is also from South Pyongan province, in February 1977 (Tomek 2002). Though the first record from southern Korea was only in 1989 (Park Haeng Shin & Kim Wan-Byung 1995), it is now a scarce migrant and winter visitor, with flocks exceptionally of 100 (Park Jin-Young 2002, Moores & Moores 2005). The species is probably genuinely increasing in Korea, reflecting a similar phenomenon in Japan (Brazil 1991) and Hong Kong (Carey *et al.* 2001). Williams (1986) felt it was more frequent at Beidaihe compared with the 1930s–1940s, but it is still rare there, being recorded less than annually (J. Hornskov *in litt.* 2005).

CHINESE PENDULINE TIT *Remiz consobrinus*
PYONGYANG: *Taedong*: one, 1 May 1999; six, 11 May 2003. *OTHER*: *Mundok MBR*: Dongrim-ri: one, 2–3 April 2003. Namei-ri: twenty, 24 October 2004; the spring birds near stands of willow, the autumn flock in a seeding reed *Phragmites* bed.

Tomek (2002) traced eight previous records, the most recent in 1965, on 3 April–15 May, with one on 13 October, offering strong parallels in date with the 1999–2004 occurrences. Gore & Won Pyong-Oh (1971) described it as a winter visitor to southern Korea, and a rare passage migrant, but it is clearly not a winter visitor to Pyongyang. In Hong Kong the species is strongly tied to reedbeds (Carey *et al.* 2001), to which I had little access, so its DPRK seasonality remains unclear. It has increased around Beidaihe (Williams *et al.* 1986, 1992), in Japan (Brazil 1991) and Hong Kong (Carey *et al.* 2001) and has recently begun breeding in the Russian Far East (Nazarov *et al.* 2001); assessing whether the rising numbers recorded in southern Korea indicate real increase is difficult because true status assessment relies on use of calls (N. Moores *in litt.* 2005). Autumn passage at Beidaihe involves conspicuous visible diurnal migration (Williams 2000), which does not (yet) seem to occur at the survey sites.

SAND MARTIN *Riparia riparia*
[*HYANGSAN*: two flew upstream along the Chongchon River, 8 November 2002.]

Sand Martin is at best only a rare passage migrant in the survey sites: I saw few hirundine flocks too large to check all individuals, other than a few seen from a moving car between Pyongyang and Hyangsan. Tomek (2002) traced only four records, on 16 May 1980 (one bird; Mauersberger 1981), 29 May 1929 (two specimens from Ryongampho: Yamashina 1932), 13–20 September 1929 (nine collected at Manpo: Yamashina 1932), and 14 October 1962 (specimen; numbers not detailed). It is also an uncommon migrant in southern Korea (Park Jin-Young 2002, Moores in press), but at Beidaihe is common, though declining (Williams 1986, 2000, Williams *et al.* 1992), and many migrate through the Russian Far East coastal plain (Nazarov *et al.* 2001). That the only record of this insectivore, which winters in tropical Asia (Cramp 1988), was of birds flying north in November is astounding: in southern Korea most autumn records are in August–September, occasionally to November (N. Moores *in litt.* 2005), and at Beidaihe, it is scarce after mid October and was unrecorded in November by Williams (2000). The very similar Pale Martin *R. diluta* was not excluded; though Cheng (1987) showed its eastern boundary west of 90°E, its distribution remains poorly known, and specimens intermediate between *R. r. ijimae* and *R. diluta* were reported from north-east China by Turner & Rose (1989). It is unlikely that the 1980 or 1962 records eliminated *R. diluta* either, though the 1929 specimens were of *R. r. ijimae* and *R. r. taczanowskii* (Austin 1948). Future records merit careful documentation.

WHITE-BROWED CHINESE WARBLER *Rhopophilus pekinensis*
PYONGYANG: *Munsu*: two in rough scrub, 13 October 2003. *Taedong*: two in ornamental park hedges, 22 June and 6 July 2003.

This very distinctive species gives frequent, noticeable calls with which I was already familiar: it must be only a very rare visitor to the survey sites. Tomek (2002) traced relatively many records, largely from Pyongyang and South and North Pyongan provinces (five, 18 and four dates respectively), with 1–2 records each from four other provinces. The most recent Pyongyang record was in 1966, the last from South and North Pyongan (except two on 9 March 1990 at Anju; Fiebig 1995) were both in 1961; and the last from elsewhere was in 1962. Given the relatively high encounter rate in the 1950s and the sustained observation effort in the 1980s and in 2000–03, this species has clearly declined in DPRK. This mirrors its possible extinction in southern Korea, where Gore & Won Pyong-Oh (1971) called it rare and localised, and Park Jin-Young (2002) traced no post-1964 records. In contrast, it perhaps increased around Beidaihe between the 1940s and 1980s (Williams *et al.* 1992), but whether this trend would have continued is unclear because of large-scale recent land development (J. Hornskov *in litt.* 2005). Reasons for the apparent decline remain opaque: habitat in Pyongyang and at Fennell & King's (1963a) observation site in outer Seoul ('in fairly high grass and small pines') is in no way

special, but in both areas it occurred but sporadically. Habitat use at a regular Korean site, never described, might be more informative in understanding what limits the species' distribution. Past DPRK records were in all months except August (Tomek 2002); the 2003 records (and those from Seoul) indicate at least seasonal dispersal, but the scale is unclear.

RUSTY-RUMPED WARBLER *Locustella certhiola*
Pyongyang: *Taedong*: singles, 15 June (heard singing from a small reedbed) and 14 September 2003 (in an ornamental town park hedge). *Hyangsan*: singles in lush riverside monocotyledons, 1 June 2002 and, singing, on 18 June 2003.

Can be very skulking (e.g. Lewington *et al.* 1991) and I had little access to optimal habitat. Could be much commoner than these records suggest; it was, for instance, widely overlooked in Hong Kong until recently (Carey *et al.* 2001). Tomek (2002) traced previous records from *c.*5 localities, the most recent (except Pyongyang, 10 June 1985) from 1954, and falling on 11 May–8 June and 17 August–September. Spring 2003 records are thus rather later than previously, though there is one from Kyonggi province on 15 June (Austin 1948), and this period is too poorly covered in southern Korea to evaluate true abundance (N. Moores *in litt.* 2005). Tomek (2002) felt that early June records might concern local breeders, but those on 15 and 18 June 2003 were undoubtedly on passage (the sites were well covered for weeks afterwards), and spring passage through Beidaihe and the Russian Far East extends to mid June, and elsewhere in Russia birds are on passage even in late June (Williams 1986, Cramp 1992, Williams & Hsu 1992). Fennell & King (1964) found the rather similar Middendorff's Warbler *L. ochotensis*, and Gore & Won Pyong-Oh (1971) described Middendorff's and/or Pleske's Warbler *L. pleskei*, to be much commoner in southern Korea than *L. certhiola*, but the latter is sometimes a fairly common migrant near the Military Demarcation Line, especially on West Sea islands (Moores in press).

GRAY'S WARBLER *Locustella fasciolata*
Pyongyang: *Munsu*: one in rank grass and young pine trees, 8 September 2003.

Though previously stated to breed in Korea (e.g. Cramp 1992), there is no such indication from southern Korea (Park Jin-Young 2002) and Tomek (2002) traced just five DPRK records, including one from Pyongyang in August 1991 (Báldi & Waliczky 1992); none was in September. Her label as a 'very rare' migrant may be hasty; it may simply be much overlooked: the species is 'extremely skulking' (Lewington *et al.* 1991), is 'astonishingly hard to see' (Brazil 1991) and almost silent in autumn (Cramp 1992), though spring migrants are very vocal (N. Moores *in litt.* 2005, *contra* Cramp 1992), as can be wintering birds in Hong Kong (G. J. Carey *in litt.* 2006). It is rare in autumn at Beidaihe (Williams 2000), and scarce in southern Korea (e.g. Moores in press).

THICK-BILLED WARBLER *Acrocephalus aedon*
PYONGYANG: *Taedong*: one (in song), 27 May 2001; 2–3, 7 September, singles, [11], 14 September 2003. *HYANGSAN*: one, 31 May 2002. [*OTHER*: *Middle Chongchon River*, 8 km south of Hyangsan: one, 31 May 2002.]. All in riverside trees and scrub.

Unlike most congeners, not specifically associated with wetlands (Lewington *et al.* 1991), to which I had little access. It seems unlikely I overlooked Thick-billed Warbler greatly at the survey sites, especially as the species habitually sings on spring passage (Cramp 1992). The few previous records were all from North Pyongan province in spring (Tomek 2002): seven collected at Ryongampho on 20–27 May 1929 (Yamashina 1932) and one there 26 May 1917; recorded at nearby Yangsi 15 May 1949; and a male at Myohyang (whether inside the current PA is unclear) 13 June 1955. My records fall within previous DPRK dates, recent sightings in southern Korea (mainly in late May and mid August–early September; Moores in press), and passage through Beidaihe, where it is much commoner (the second half of May, and August, usually scarce after mid September; Williams 1986, 2000, Williams & Hsu 1992). Tomek's (2002) suggestion, based on date alone, that the 1955 record might be a local breeder is rash, given the late May–early June arrival to Ussuri breeding grounds (Cramp 1992) and ongoing passage at Beidaihe into early June (J. Hornskov *in litt.* 2005). Tomek (2002) considered it a 'very rare passage migrant . . . the passage routes bypass the Korean Peninsula'. It is indeed scarce, including in mainland southern Korea (Gore & Won Pyong-Oh 1971, Moores & Moores 2005), notwithstanding day counts of up to 15 on West Sea islands such as Socheong (Moores in press).

RICHARD'S / BLYTH'S PIPIT *Anthus richardi* / *A. godlewskii*
PYONGYANG: *Moran*: singles, 14 September 2002, 17 May, 6 September 2003. *Munsu*: singles, 21 September 2001* (on bare earth), 18, 24 September 2002. *Taedong*: singles, 2 October 2000, 1 May 2002; 12, 9 September 2002; one, 27 September 2003. *HYANGSAN*: singles, 9 May*, 21 May, 20 September 2002, 28 April*, 23, 26 September 2003. *OTHER*: *Anju bridge*: 2+ in short estuary-side grass, 1 October 2002*. Only asterisked birds were perched, those at Hyangsan on a riverside bund covered in short turf; but most others were flying quite low and probably dispersing from roost, rather than on active migration.

Most birds sounded like wintering Richard's Pipits in south-east Asia, but I had no prior experience of Blyth's Pipit's calls. Based on relative status at Beidaihe (Williams 2000) and southern Korea (where Blyth's is very scarce in spring and rare in autumn; N. Moores *in litt.* 2005), it is probable that Richard's Pipit greatly predominated, but Blyth's may also have been involved. Tomek (2002) traced only three records of Richard's (4–12 May 1929, six specimens from Ryongampho [Yamashina 1932]; 14 September 1962; and 21 September 1967) and (dismissing a second) one of Blyth's (15 March 1956; a date so anomalous compared with recent records in southern Korea [where the earliest was on 14 April 2005; N. Moores *in*

litt. 2006] that it should also be regarded as doubtful). Evidently, large pipits have been widely overlooked in DPRK (as earlier happened in southern Korea: Gore & Won Pyong-Oh 1971), presumably because no previous observers knew their flight-calls. Given my records, Tomek's (2002) statement that Richard's Pipit's migration route 'bypasses the Korean Peninsula' needs revision; it is also regular on spring and autumn passage through southern Korea (Moores in press). It seems commoner at the survey sites in autumn than in spring; passage dates (late April and first two-thirds of May; last three weeks of September and earliest of October) reflect those at Beidaihe (Williams 1986, Duff *et al.* 2000), though in southern Korea Richard's Pipit occurs into November (Moores in press), Tomek's (2002) statement that a specimen in juvenile plumage from 21 September is suggestive of local breeding is without foundation, given that passage through Pyongyang is well underway by then.

PECHORA PIPIT *Anthus gustavi*

PYONGYANG: *Moran*: 1–2, 21 September 2002, singles, 6, [20] September, 4 October 2003. *Munsu*: singles, 24, 29 September 2002, 1 September 2003. *Taedong*: singles, 9 September 2002 and 7 September 2003, two, perhaps seven (including 1* in riverside ruderals), 14 September, singles, [20], 27 September, up to 31 south-east, 28 September, [one, 4 October] 2003. *HYANGSAN*: two (1*, in a densely tangled bean-field with ruderals), 20 September 2002, one, 21 May, [one, 23 September], four, 30 September 2003. *OTHER*: *Anju bridge*: two, 3 September, one, 19 September 2002. Except for asterisked records, birds were flying over, but usually low rather than on apparent migration.

I did not know this species' distinctive flight-call before autumn 2002, and it is very skulking and difficult to flush (Cramp 1988), doubtless explaining my lack of records in 2000–01. Tomek (2002) traced only seven records (including Anju, 17 May 1934; Austin 1948), the most recent from 1963, and considered it 'a scarce passage migrant . . . [that] probably travels . . . north of the Paekdusan massif'. Given the present records (frequent in autumn, extreme dates 1 September–4 October; and one spring record), and that Orii collected 11 specimens at Ryongampho, North Pyongan province, on 29 April–3 May 1929 (Yamashina 1932), it has surely been greatly overlooked, as occurred earlier in southern Korea (Fennell & King 1964, Gore & Won Pyong-Oh 1971). Austin (1948) opined that 'it is of only casual occurrence . . . south . . . [of the] northern provinces', but it is now considered a regular migrant (e.g. Moores in press). The present autumn dates resemble migration through Beidaihe, which continues from early September to early October (Duff *et al.* 2000), whilst in southern Korea, there is an obvious peak in mid to late September (Moores in press). Singles are typical on passage (Fennell & King 1964, Cramp 1988), but small, typically single-species, flocks often do occur on migration (N. Moores *in litt.* 2006); the count of up to 31 included flocks of 18 and eight from which the only calls were of Pechora Pipit, but the birds may not have all been of this species.

RED-THROATED PIPIT *Anthus cervinus*

PYONGYANG: *Moran*: one, 24 September 2000; two, 21, 28 September, one east, 5 October 2002; six south-east, 27 September; two south, 4 October 2003. *Munsu*: 1–2, 21 September 2001, 18, 22, 24 (south), 26 (south) September 2002, ten south-east, 29 September 2002; singles, 15 September (south), 6 October 2003. *Taedong*: singles, 23 September 2000 (south); 27 April, 3 May* (flew off Rungra islet), [15], 17, 25, 30 (south-east) September 2002; one, 14 September, two, 20 September, six, 21 September 2003, 25 south-east, 28 September 2003. *HYANGSAN*: one, [26], 28 September 2001; 40 south, 20 September, one, 23 September, two, 2 October 2002; 1–3, 28 April, 29 April (north), 4 May; singles, 16* (on wires above short riverbank grass), 23, 24 September, 2 October (south-west), [8 October] 2003. *OTHER*: *Anju bridge*: 300+, 19 September, 30, 20 September, one, 22 September, 30, 1 October, singles, 7 October 2002, 3 May 2003. *Middle Chongchon River*, 45 km south of Hyangsan: one, 20 September 2002. All birds except those asterisked were in flight, but most were low and not on active migration.

Clearly a regular passage migrant at the survey sites, much commoner in autumn than spring (like Pechora Pipit). The paucity of records pre-2002 doubtless reflects limited effort for and familiarity with flyover pipit calls. Tomek (2002) traced only 11 records, the most recent in 1965; she overlooked 11 collected around Ryongampho, North Pyongan province, on 28 April–4 May 1929, and singles at Manpo, North Hamgyong province, 4 and 8 October 1929 (Yamashina 1932), and the three (hitherto unpublished) specimens taken by Hall in Wonsan on 2–9 May 1903 (Sweet *et al.* in press). Past sites included outer Pyongyang (in 1965) but surprisingly, given Won Hong Koo's many years' residence at Anju (Austin 1948), not the Chongchon catchment. Tomek (2002) concluded that Red-throated Pipit's passage routes 'tend to bypass the Korean Peninsula', but it appears instead that previous observers did not know the distinctive flight-call; moreover, it is now considered a locally common or very common migrant in southern Korea (N. Moores *in litt.* 2005). Birds leave the Russian tundra breeding grounds in late August–early October (Cramp 1988), and pass Beidaihe from *c.*7 September to *c.*11 October, peaking just after mid September with a few to mid October (Duff *et al.* 2000). This reflects their appearance in Korea in mid September–early October (2000–03 records; past records 4–8 October, Yamashina 1932, Tomek 2002), Surprisingly, historical spring records greatly outnumber those in autumn (perhaps reflecting the much greater numbers of bright-plumaged birds in spring), falling on 27 April–10 May, with extreme dates 14 April and 29 May (Yamashina 1932, Tomek 2002, Sweet *et al.* in press), similar to the recent period of late April and early May, and to the Beidaihe timing of late April and first three weeks of May, but mainly the first third of May (Williams 1986). Non-breeders are markedly more gregarious than Pechora Pipits (Cramp 1988), reflected in the number of records of flocks (the largest a dispersed stream of 300 birds).

BUFF-BELLIED / WATER PIPIT *Anthus rubescens / A. spinoletta*
Pyongyang: *Moran*: one, 11 November 2001; two, 25 October 2003. *Munsu*: singles, 8, 14 April, seven south-east, 29 September 2002; 1–2, 15, 20, 22 October, 19 November 2003. *Taedong*: 1–2, 31 October 2001 (south); 28 March* (on damp ploughed earth), 2* (likewise), 10, 13, 17, 25 April, 14, 19, 21 October, 2, 4, 9 November 2003; one, 13 March* (on flattened dead reeds), two, 14 March* (likewise), one, 27 October 2004. *Hyangsan*: two, 10 April 2002; singles, 21 April, 8, 16, 24, 30 October; nine, 17 October 2003; one, 17 March 2004. *Myohyang*: *Wonman*: three north, 6 April 2003. *Other*: *Anju bridge*: one, 19 October 2001; six, 1 October, one, 23 October 2002. *Mundok MBR*: Dongrim-ri: four, 25 March, up to 24, 21–23 October, one, 4 November 2004. Soho-ri: 20, 22 October 2004. Ryongro-ri: two, 23 October, seven, 27 October, present, 28 October 2004. Namei-ri: three, 24 October 2004. Except those at Mundok, which fed in a variety of habitats, and those asterisked on Rungra islet, Taedong, birds were flying over, mostly low and not on active migration.

I was unsure of this species-pair's calls before autumn 2001, and this, together with the lower observation effort, doubtless explains the lack of records earlier. Those by the Taedong in March 2004 were confirmed by plumage as Buff-bellied Pipit, but all others except at Mundok were identified primarily by call, and because Water Pipit *A. spinoletta blakistoni* calls are confusingly similar (Alström & Mild 2003) were identified only to species-pair. Rosy Pipit *A. roseatus* also has similar calls (Alström & Mild 2003), so could potentially have been overlooked, but it is only a vagrant to Korea (Lee *et al.* 2000). Records were doubtless at least predominantly Buff-bellied Pipit, which is common at Beidaihe, though Water Pipit is also regular (Williams 1995, 2000; J. Hornskov *in litt.* 2004). Buff-bellied is fairly common and widespread in southern Korea on passage and some overwinter (Gore & Won Pyong-Oh 1971, Moores in press; N. Moores *in litt.* 2005), whereas records of *A. s. blakistoni* are few (Yamashina 1932, Fennell 1959, Moores & Moores 2005). Yamashina's, rejected by Austin (1948) without direct examination, was reconfirmed by Fennell (1959), but Fennell's careful review was overlooked or discounted by Lee *et al.* (2000), who did not list Water Pipit for Korea.

Tomek (2002) traced only five spring and two autumn records of 'Buff-bellied Pipit', of which only two (21 April 1962, *c.*10 on 19 October 1984: Tomek & Dontchev 1987) were post-1929. One of these records, of four collected in North Hamgyong province on 12–24 May 1912, and housed at AMNH (Austin 1948), actually refers to, and always was catalogued as, Olive-backed Pipit *A. hodgsoni* (P. Sweet *in litt.* 2006). However, Buff-bellied / Water Pipit is evidently regular on passage at the survey sites, being (at least occasionally) abundant at Mundok, supporting Tomek's (2002) opinion that Buff-bellied Pipit is overlooked. The present records fell during mid March–mid or late April, and late September or early or mid October–early or mid November, the latest on 19 November 2003; it passes later in autumn and earlier in spring than other pipits. This reflects timing in southern Korea, where spring numbers peak in March, extending through April and

into May, and autumn birds pass in October and November (N. Moores *in litt.* 2006). Past records spanned 11 April–3 May and 26 September–29 October. Autumn dates are similar, but historical spring records were much later than recent ones. At Beidaihe, where both species' records were analysed together, autumn passage peaked in the latter two-thirds of October, extending from early October to early November (Duff *et al.* 2000), similar to DPRK records. Spring birds occurred from late March, with significant passage in mid April to early May (Williams 1986), reflecting the past rather than present records. In spring 1994, Williams (1995) found that Buff-bellied (much commoner than Water) passed in April and the first half of May, whilst Water passed in mid March to mid April. Clarification is needed of the proportion of each species amongst DPRK records and whether they differ in timing.

Tomek (2002) also listed a 'Buff-bellied Pipit' from 1 December 1929; but this is actually a Water Pipit (Fennell 1959), and the collecting base, Kumhwa ('Kinkwa' in Yamashina 1932; 38°10'N, 127°33'E), lies just south of the Military Demarcation Line. The collection site is unclear: Yamashina (1932) assigned Orii's records only to general area and for Kumhwa records Orii may well have ranged both sides of the (future) Military Demarcation Line. Water and Buff-bellied Pipits were previously widely considered conspecific, including by Austin (1948) and, evidently, Tomek & Dontchev (1987). Yamashina (1932) identified as *A. r. japonicus* six from Ryongampho on 15 April–3 May 1929, and 11 from Manpo on 26 September–29 October 1929; but those from 3 May 1917, 11 April 1914, 14 October 1984 and 21 April 1962 (all listed as 'Buff-bellied Pipits' by Tomek 2002) should be left unidentified to species.

COMMON REDPOLL / HOARY REDPOLL *Carduelis flammea* / *C. hornemanni*

Pyongyang: *Moran*: one, 9 November 2002, four, 8 November 2003. *Munsu*: singles, 7 November 2001, 1 November 2002 and 19 November 2003. All were calling and seen only in flight; only those on 8 November 2003 were confirmed visually as redpolls.

Birds were not seen well enough to distinguish between Hoary and Common Redpolls. Both species were listed for Korea by Lee *et al.* (2000) and Gore & Won Pyong-Oh (1971), the latter referring to three DPRK Hoary Redpoll specimens, two in February and one in November (or January; see Austin 1948, who indicated that only one of the February birds was originally identified as Hoary). These were identified without direct skin comparisons, their measurements fell well within Common Redpoll's (Austin 1948), and Tomek (2002) listed the February record under the latter, omitting the November/January record entirely. Nonetheless, the identifications should be considered open (see Water Pipit, where Austin dismissed another's identification without seeing the specimen in question and re-examination showed his action to be in error), and Hoary Redpoll has recently been found in southern Korea (N. Moores *in litt.* 2006), and occurs at Beidaihe (Williams 1995)

and in Japan (Brazil 1991). Redpoll flight-calls are distinctive, frequently given, and I was familiar with them, so it is unlikely to have been overlooked significantly, making it a very scarce autumn migrant. The *c.*16 previous records (including both outer Pyongyang and Myohyang), the most recent in 1966 and 1973, fall on 7–28 November and 20 January–22 February (Tomek 2002); the present records reflect the November dates and occurrence at Beidaihe: mainly in late October (exceptionally, early October) to mid November, potentially later (Williams 2000). Of all months, I made fewest observations in February–March, perhaps explaining my lack of 'spring' records: spring passage in Asia peaks in March (Cramp & Perrins 1994), though there are too few recent records from southern Korea or Beidaihe to permit more precise comparison (N. Moores *in litt.* 2004, J. Hornskov *in litt.* 2005). Austin (1948) described redpolls as 'uncommon, irregular' in Korea. By contrast, it was a 'common but irregular winter visitor' to southern Korea, with few if any in some years but huge flocks in others (Gore & Won Pyong-Oh 1971), reflecting erratic occurrence at Beidaihe (Williams *et al.* 1992) and 'highly fluctuating numbers' (abundant, to effectively absent) in Ussuriland (Cramp & Perrins 1994). That both historical Myohyang records were in winter 1956–57 (Tomek 2002), despite sustained collection there over several years, suggests this was one such invasion year. The lack of invasions to the survey sites in 2000–03 was paralleled in southern Korea, N. Moores *in litt.* (2004) knowing of only very few records in this period. Alternatively, it appears to have declined at Beidaihe since the early 20th century (Williams *et al.* 1992; J. Hornskov *in litt.* 2005) and may also be doing so in Korea.

COMMON ROSEFINCH *Carpodacus erythrinus*

Pyongyang: *Moran*: one, 9 November 2002*, two, 11 January* and 11 October 2003. *Munsu*: singles, 22 September*, 28–29 October*, 10–11, 22* November 2002; five (four south), 6 October; singles, 9, 27 October, 10 November 2003. *Taedong*: 1–2, 28 September, 5, 19, 26 October 2003. *Hyangsan*: singles, 21 April*, 9, 30 October, 14 November 2002 and [27 April 2003], four, 4 May*; singles, 23, 24 September, 7, 8, 23 October 2003. Only asterisked birds were perched; all were in dense bushy areas, mostly on or near the ground.

The only records in Tomek (2002) are from Ryonggang province (many years; 2 June–27 July), three other highland sites (15 June–8 August, and 'May'), and the Amnok River (undated; north-west land border of Korea); the most recent was in 1967. Thus, it was previously not recorded on passage in the central Korean lowlands, where I noted the species in autumn (mid September–late October, sometimes late November), once in midwinter (11 January 2003) and thrice in spring (late April–early May). Population and range have recently expanded dramatically in Europe (Cramp & Perrins 1994), but this much greater number of DPRK records seems more likely to indicate that previous observers in central Korea were unfamiliar with its calls (and so was I, pre-autumn 2002). Equally, the species was previously a 'rare passage migrant' in southern Korea (Gore & Won

Pyong-Oh 1971), but is now recorded regularly on passage (Moores in press), with at least one record there in midwinter 2002–03 (N. Moores *in litt.* 2004). The wide seasonal spread of records, including midwinter, resembles the pattern in the British Isles (Dymond *et al.* 1989). Similarly, it visits Beidaihe (where most autumn birds are also overflying migrants; Williams 2000) from late August to early November, with peak passage late September (Duff *et al.* 2000), has apparently wintered there, and spring passage ran during the middle fortnight of May (Williams 1986). In southern Korea, most occur between late April and late May and again in September and October (N. Moores *in litt.* 2006). In Europe, spring migration is rapid (Cramp & Perrins 1994), perhaps explaining my relative lack of records then. Of all those seen well (perched and a few flyovers), the only red bird was on 21 April 2002.

JAPANESE GROSBEAK *Eophona personata*
PYONGYANG: *Moran*: two, 26 May 2002. *Munsu*: one, 20 May, two, 28 October 2002. *Taedong*: at least one, 26 October 2003. *HYANGSAN*: singles, [9 May 2002], 5 March 2004. *MYOHYANG*: *Wonman area*: three south, 15 October, 32 south, 16 October 2001; [*Nyungin-am*: one, 26 November 2002].

A few Japanese Grosbeaks may have been overlooked among the commoner Yellow-billed Grosbeak *E. migratoria*, with which it was seen to flock and shares similar calls, but it is clearly an infrequent passage migrant at the survey sites. Tomek (2002) traced only 7–8 records (from four sites), including Myohyang (20–25 on 30 April 1989; Fiebig 1995). She overlooked Won Pyong-Oh's (1970) reference to 'several dozen' kept captive by farmers in Tok'chun (presumably, Tokchon, South Pyongan province) in August 1945. Other past dates are: 20 April 1945; 26 May 1917 (Austin 1948); 30 May 1960; 4 June 1945; 10 June 1963; and 20 October 1984 (Tomek & Dontchev 1987). Most of the present records are from similar months (three in May and four in October), but the March and [November] sightings have no precedent in DPRK. However, it winters in north-east China (Vaurie 1959) with recent records at Beidaihe to mid November (Williams 2000), there is a 9 January 1918 record from southern Korea (Austin 1948) and a few recent November and winter records in southern Korea (Lee *et al.* 2000, Park Jin-Young 2002, Moores in press). Moreover, the partial migrant subspecies endemic to Japan makes movements into November (Brazil 1991). Tomek (2002) felt, based on occurrence in late May and early June, that Japanese Grosbeak probably breeds in DPRK, but this needs caution. The 2001–04 records reveal passage into late May (the species certainly did not breed in either Moran or Munsu in 2002). In southern Korea it was a rare passage migrant, occurring mainly in April–June (Gore & Won Pyong-Oh (1971); most recent spring records are in May, and breeding is not suspected (N. Moores *in litt.* 2005). Spring occurrence in 1985 at Beidaihe fell entirely in the third week of May (Williams 1986), though it mainly passes in early May (J. Hornskov *in litt.* 2005).

PINE BUNTING *Emberiza leucocephalos*
PYONGYANG: *Taedong*: two flushed from rank weedy growth on Rungra islet, 30 October 2004. *HYANGSAN*: [1–2 flying over on 17, 30 October], singles on 25 November 2003 and 8 March 2004, in flocks of Rustic Buntings *E. rustica* feeding in weedy vegetable plots near riverside willows.

I probably overlooked Pine Bunting rather less than some other buntings: its calls are readily recognisable to English ears, being identical to those of Yellowhammer *E. citrinella* (Beaman & Madge 1998). Nonetheless, the call-based records of October 2003 were left unconfirmed. Hybrids with Yellowhammer may be effectively indistinguishable from Pine Buntings (Byers *et al.* 1995), but are presumably very unlikely given the mere handful of Korean Yellowhammer records (N. Moores *in litt.* 2004). Tomek (2002) traced only *c.*6 records, the latest from 1967, plus two in August 1991 (Báldi & Waliczky 1992) that she rejected on grounds of unlikely date. One of these was at Myohyang (sometime during 8–12 August 1991). Past DPRK records span 28 September–30 (or 20) October and 21–26 March (Tomek 2002); thus, the 2003–04 records include significantly more 'wintry' dates. They are consistent with autumn dates at Beidaihe (where Pine Bunting is much commoner than in Korea) of late October–late November, occasionally early October (Williams 2000), and in southern Korea most records are in December–January, occasionally from late October (Gore & Won Pyong-Oh 1971, Park Jin-Young 2002). Though Austin (1948) traced just three records, it is too frequent to warrant the 'vagrant' to Korea designation in Byers *et al.* (1995); equally, in southern Korea the species is better considered a rather scarce migrant and rare, irregular, winter visitor (N. Moores *in litt.* 2005).

LITTLE BUNTING *Emberiza pusilla*
PYONGYANG: *Munsu*: one in dense scrub and crop stubble, 10–14 November 2001. *Taedong*: two in an ornamental riverside hedge, 3 May 2002. *HYANGSAN*: singles, 28 April (in a flower-bed), 8 May (in bushes with Black-faced Buntings *E. spodocephala*) and 14 November 2003 (in low bushes).

Buntings were checked sufficiently well to be sure that Little Bunting, whilst doubtless overlooked, was not frequent at the survey sites. However, in Hong Kong, most records are from open grassy habitats, including cultivation, with relatively few from shrubby edges (Carey *et al.* 2001) and in southern Korea passage migrants are mostly on arable land, and wintering flocks are mostly in reedbeds (N. Moores *in litt.* 2006): the survey sites contained little of any of these favoured habitats, so may not represent its status in DPRK. Tomek (2002) traced few DPRK records, the most recent in 1965, sites including outer Pyongyang (May 1959) and past dates span 26 April–8 May (seven records), almost identical to the 2001–03 records, and 20 October: three weeks before my earliest autumn record. It was previously also considered 'uncommon' in southern Korea (Gore & Won Pyong-Oh 1971), but has since been found to be common on passage and scarce in winter; spring migration

commences in March and peaks in late April, with smaller numbers into May, and autumn migration is concentrated in mid to late October, with a few still in November (Moores & Moores 2005, Moores in press). Occurrences at Beidaihe are also very widespread over the year, with spring passage concentrated during and after the last third of April (Williams 1986) and autumn numbers peaking in the last two-thirds of October and first third of November (Duff *et al.* 2000), a fair fit with the 2001–03 records.

YELLOW-BROWED BUNTING *Emberiza chrysophrys*

Pyongyang: *Munsu*: singles, 2, 4 May 2002, two, 13 September 2002, one, 29 September 2003. *Taedong*: two, 12 May 2001, one, 19 May 2002, one, 25 April, four, 1 May, singles, 11 May, 7 September 2003. *Hyangsan*: five, 28 April, three, 4 May 2003. All were in mixed bushes, shrubs and short vegetation, usually with some bare earth nearby.

I may have overlooked the species somewhat in autumn, given the denser vegetation (birds in Pyongyang were often very skulking, as elsewhere; Beaman & Madge 1998) and generally larger numbers of buntings (more of which went unidentified) than in spring. Also, young in autumn can look very similar to Tristram's Bunting *E. tristrami* (Byers *et al.* 1995), which was common at most survey sites. Tomek (2002) traced just four records, the most recent in 1958, all in spring (2–14 May; and 2 April 1958), but my records reveal it to be regular, though scarce, in spring (extreme dates 25 April–19 May), with three September records. This supports Tomek's (2002) suspicion it had been overlooked, as happened in southern Korea, from where Austin (1948) traced no records, but it is now known to be fairly common, in flocks of up to 125 (Moores in press). In the 1940s at Beidaihe, records showed a seasonal split similar to my survey sites, being not infrequent in spring, but with only one in autumn, yet recent sightings show no such strong pattern (Williams 2000). The historical DPRK record on 2 April is much earlier than 2001–03 dates, yet the spring period for southern Korea in Gore & Won Pyong-Oh (1971), February–March, is even more so, and is anomalous with recent records there, in mid April–mid May (N. Moores *in litt.* 2004), and at Beidaihe, late April–mid May (Williams 1986; J. Hornskov *in litt.* 2005). However, for the first time, a small flock wintered at Beidaihe in 2004–05 (J. Hornskov *in litt.* 2005). Neighbouring sources agree on a more prolonged autumn passage than my 2001–03 records: in southern Korea, September–November (Gore & Won Pyong-Oh 1971) or mid September–late October, exceptionally early November in the far south-west (N. Moores *in litt.* 2004); and at Beidaihe, a few in late August, throughout September–October, peaking halfway through, occasionally to early November (Duff *et al.* 2000; J. Hornskov *in litt.* 2005).

OCHRE-RUMPED BUNTING *Emberiza yessoensis*
PYONGYANG: *Taedong*: one in the Rungra islet reeds, 9 and 12 November 2003. *OTHER*: *Mundok MBR*: Dongrim-ri: two in tall reeds, 23 October 2004. Ryongro-ri: one in a richly weedy rice stubble, 27 October 2004.

Ochre-rumped Bunting may have been overlooked at the survey sites (the Rungra reeds were not well covered before autumn 2002) which in any case would not well represent its status in central Korea, the only extensive suitable habitat visited (wetlands with tall grass and scrub; BirdLife International 2001) being at Mundok. Moreover, unlike other 'reed buntings', the call is an anonymous *tic* similar to various other buntings, including Black-faced Bunting which also skulked in the Rungra reeds. Tomek (2002) traced just 7–9 records, the most recent in 1961, mostly on or near the coast. Apart from second-hand reports from Ryongampho, South Pyongan province, in May–June 1917 (Kuroda 1918), records were from 22 September to 27 February, with one on 20 April. Autumn passage at Beidaihe starts in mid October, with most in late October–early November (Duff *et al.* 2000), meaning that the autumn 2004 visit to Mundok was well timed to find this species. In southern Korea it is a scarce migrant and winter visitor, primarily to the west coast, with many fewer than 100 reported annually (Moores & Moores 2005; N. Moores *in litt.* 2005), and as the species is globally Near Threatened (BirdLife International 2001) the Mundok area, and the rest of the Chongchon estuary, merits a proper survey for it.

LAPLAND LONGSPUR *Calcarius lapponicus*
PYONGYANG: *Taedong*: one flew low over, 8 November 2004. [*HYANGSAN*: singles flying over, 15 November 2002 and 17 March 2004]. *OTHER*: *Anju bridge*: [singles, 25 November 2002 and 26 November 2003, *c.*1,000, 11 March], 35, 15 March 2004, all low over extensive brackish marsh and fields; found on brief roadside stops; no foot access there. *Mundok MBR*: Ryongro-ri: three flew low over, 28 October 2004.

Except at Anju bridge, I had only very rare access to optimal habitat (in Korea, coastal open country and dry rice fields: Gore & Won Pyong-Oh 1971). The six previous records, the most recent in 1972, were from only four sites (Tomek 2002). Dates are 6, 10, 31 (*sic*, *fide* Austin 1948) November, February, 19 March, 4 April, 11 May. This wide spread contrasts with the present records clustering within one month in autumn and a week in spring, and perhaps it is but a passage migrant inland. The autumn period resembles that at Beidaihe: most in the last third of October, with smaller numbers from mid October to late November (Duff *et al.* 2000). It may be much overlooked in DPRK: Fennell & King (1964) felt that their 'observations indicate that it may be of far more common occurrence [in southern Korea, whence Austin (1948) traced only a handful of records] than originally supposed' and it is indeed common there, especially on the west coast, mainly in late October–March (N. Moores *in litt.* 2005). At Beidaihe it has probably declined,

perhaps reflecting climatic amelioration (Williams *et al.* 1992), and this may also contribute to the few recent DPRK records.

Concluding remarks

The status of most of these species can fairly be determined for the survey sites because coverage was year-round and sufficiently intensive (at least several hours per day on 729 days, plus 15 days contributed by R. J. Tizard) to characterise all species except those very skulking, nocturnal, associated with infrequent weather events, highly localised in occurrence, and/or readily misidentified as other species. However, the DPRK-scale status assessments of Tomek (1999, 2002) cannot so readily be revised because my coastal observations were so limited and most of these purportedly rare species would be expected to be commoner there. Some are coastal (Baikal Teal, Slaty-backed Gull, Black-legged Kittiwake, Marbled Murrelet, Red-necked Grebe, loons and Ochre-rumped Bunting), and even most others (except Grey-capped Pygmy Woodpecker, Eurasian Eagle Owl and White-browed Chinese Warbler, possibly also Little Owl and Solitary Snipe), being long-distance migrants, presumably occur more often on the coast than inland. Indeed, of the 49 species detailed above, eight were found at the coastal Mundok Migratory Bird Reserve, two at Kuwol (which lies closer to the coast than the survey sites), even though only ten and four days respectively were spent at each, and ten at Anju bridge (over the tidal Chongchon), a site surveyed only during brief roadside stops. There was also limited suitable habitat at the survey sites for Yellow-legged Buttonquail, Grey-headed Lapwing, Oriental Pratincole, White-winged Tern, Cinereous Vulture, Eurasian Marsh Harrier, Purple Heron, Intermediate Egret, Bluethroat and Rusty-rumped Warbler; records of which largely involved overflying birds, involuntarily grounded migrants, and/or the limited time outside the survey sites. Hence, extensive further observations are needed to clarify the basic status of these, and the coastal, species in suitable habitat in the DPRK.

Of the remaining species, there is persuasive evidence that only one, Black-crowned Night Heron, is genuinely expanding its range (as apparently is Eurasian Blackbird *Turdus merula*, previously unrecorded in northern Korea but now regular in at least Pyongyang; Duckworth 2004), though others may be doing so (e.g. Common Starling). The number of recent records makes clear that Baikal Teal, Oriental Honey-buzzard, Intermediate Egret, Japanese Waxwing, Siberian Rubythroat, Chinese Penduline Tit, Thick-billed Warbler, Richard's/Blyth's Pipit, Pechora Pipit, Red-throated Pipit, Buff-bellied/Water Pipit, Common Rosefinch, Japanese Grosbeak, Little Bunting, Yellow-browed Bunting, Lapland Longspur and perhaps Pine Bunting are not genuinely rare in DPRK, and most or all have simply have been overlooked previously. In all cases the larger volumes of mostly unpublished recent data from southern Korea support this assessment (e.g. Moores in press.).

True DPRK status remains elusive for those species still known only by few records: some are difficult to judge because they may be readily overlooked, e.g. Solitary Snipe, Eurasian Eagle Owl, Long-eared Owl and Gray's Warbler. Others might be genuinely rare, at least inland, especially those for which the survey sites apparently hold suitable habitat, including Grey-capped Pygmy Woodpecker, Little Owl, Short-eared Owl, Common Starling, Sand Martin, White-browed Chinese Warbler and Common/Hoary Redpoll. The same may also be true for a suite of landbirds which breeds in Japan (and in some cases associated islands) but not on the Korean peninsula or north-east Asian mainland, Brown-headed Thrush (if it occurs at all), Narcissus Flycatcher (excluding the distinctive Chinese taxon *F.* (*n.*) *elisae*), Japanese Robin and Chestnut-cheeked Starling. Four other species of similar distribution (Vaurie 1959, Weprintsew *et al.* 1990), Japanese Thrush *Turdus cardis* (also with a disjunct population in east China), Sakhalin Leaf Warbler *Phylloscopus borealoides*, Japanese Yellow Bunting *Emberiza sulphurata* and Grey Bunting *E. variabilis* were not recorded at all. All eight were traditionally regarded as vagrants to Korea (e.g. Gore & Won Pyong-Oh 1971), but recent observations on the south coast and islands have shown them all (except, as yet, Sakhalin Leaf Warbler) to be regular, in some cases numerous, migrants (N. Moores *in litt.* 2004). Because no species with such a distribution has been found regularly in DPRK, it seems safe to assert that in inland central Korea they really are rare. Coastal observations are needed to assess whether this is true for DPRK as a whole, which is quite plausible: in five autumns' intensive surveying at Beidaihe, not one of these species was recorded by Williams (2000) and all, if occurring at all, must be very rare there.

Breeding status has been patchily determined for the Korean avifauna. For many species, breeding in DPRK has been proposed or inferred solely from the date of one or a few DPRK records by comparison with known timing of breeding in nearby countries. This is risky, because it takes no account that breeding timing and hence migration may differ greatly (by weeks) between populations of a given species, nor that in some species first-years may travel significantly later in spring than do adults (Wernham *et al.* 2002). Hence, onward passage birds of a given species may overlap with local arrivals already nesting. Of the species reviewed above, though stated elsewhere to perhaps or even probably breed in DPRK, there is no persuasive evidence that Marbled Murrelet, Oriental Honey-buzzard, Brown-headed Thrush, Narcissus Flycatcher, Japanese Robin, Rusty-rumped Warbler, Gray's Warbler, Thick-billed Warbler, Japanese Grosbeak or Ochre-rumped Bunting do so. Surveys have been inadequate to state that they do not, and on the basis of distribution in neighbouring countries it is highly likely that some do, but direct evidence of this is needed.

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Body weights of 98 species of Andean cloud-forest birds

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Avian body masses have been compiled for many species of the world (Dunning 1993), but data for many Neotropical species are still lacking or sample sizes are small. Bird weights from several countries in north-western South America are available (Ecuador: King 1991, Rahbek *et al.* 1993; Venezuela: Thomas 1982, 1990 and references therein; and Colombia: Burton 1973, 1975, Oniki & Willis 1991). Additional compilations of such basic information are still broadly useful since body mass may be strongly correlated with life-history traits such as longevity and reproduction (Newton 1998, Vuilleumier 1999), and because weights may be convenient surrogates for ecological and evolutionary variables such as abundance, dispersion and geographical distribution (Marini *et al.* 1997, Gaston & Blackburn 2000). This paper presents body weights for 2,634 individuals of 98 species of Andean cloud-forest birds, from the western slope of the Eastern Cordillera of Colombia.

Data and study sites

From January 1998 to December 2000, birds were mist-netted within forest for two consecutive days per month, at each of four sites. Birds caught were measured for morphometric data and weighed using an electronic balance (Ohaus®) to the nearest 0.1 g. The sex of most individuals was determined either via laparotomy or by noting sexually dimorphic traits in the case of hummingbirds. Furcular subcutaneous fat deposits were checked in the field and noted as categories (none=no fat, some=traces, medium=almost covered, high=completely covered and more).

All four sites surveyed are in dpto. Cundinamarca, *c.*15 km west and 20 km north-west of Bogotá city: (1) Finca San Cayetano, Vereda Fute, municipio Bojacá (04°38'N, 74°19'W), 2,700 m, forest patch *c.*800 ha; (2) Finca El Silencio, Vereda El Remanso, municipio de Bojacá (04°37'N, 74°19'W'), 2,750 m, forest patch *c.*15 ha; (3) Finca Miralejos, Vereda Pueblo Viejo, municipio Zipacón (04°46'N, 74°24'W), 2,850 m, forest patch *c.*5 ha; and (4) Finca La Selva, between Vereda La Selva and Tribuna, municipio de Facatativá (04°52'N, 74°23'W), 2,850 m, forest patch *c.*2,000 ha.

In this region, remnant cloud-forest fragments, including the four surveyed, occur within a matrix of intensively farmed areas at the western border of the

Sabana de Bogotá. The area is part of a larger tract of forest that continues south-west and north for *c.*50 km along the ridge of the Bogotá plateau. Forests of different size, slope and degree of disturbance vary from large tracts of fairly undisturbed remnants to small-forest fragments amongst pastures. Vegetation is similar in general structure and consists of large trees with a mean height of 15 m and dense undergrowth, although some places show a discontinuous canopy with signs of recent human and cattle disturbance. Trees and shrubs of the families Asteraceae (*Ageratina* spp., *Erato* spp. and *Eupatorium* spp.), Winteraceae (mostly *Drimis* spp.) and Melastomataceae (*Miconia* spp., *Tibuchina lepidota*, *Bucquetia* spp. and *Clidemia* spp.) are dominant. Rubiaceae (mostly *Palicourea* spp.), Ericaceae (*Macleania rupestris*) and Melastomataceae (*Miconia* spp.) dominate the understorey, with some Orchidaceae (*Pleurotalis* spp. and *Epidendron* spp.) and Araceae (*Anturium* spp.) at all sites.

Table 1 summarises weight data for each species analysed separately for the sexes (F=female, M=male, U=undetermined). The latter category primarily comprises individuals for which gonads could not be seen during laparotomies. A *t*-Test (α=0.05) was performed for those species in which the combined categories of female and male were equal or more than 20 samples. If no differences were found, they were lumped and tested against the Undetermined category. In all cases (25 species), no statistical differences were found in either of the two steps. We include this combined result under each species as combined category (C). If data were available for <4 individuals of a given sex, the table includes the weights for each individual, rather than the mean. When >3 individuals were measured, the table reports the mean, standard deviation, range, and first and third quartiles. We included quartiles because these metrics help identify if the distribution of weights for each category is symmetrical. When an egg was evident in the oviduct, females were not included to obtain the mean, standard deviation or quartiles. The weight of such females is presented separately as F*. Since accounted subcutaneous fat deposits did not correspond to individuals with more weight or vice versa, results were not separated by this characteristic. Taxonomy follows Remsen *et al.* (2006).

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TABLE 1
Body masses (g) of Andean cloud-forest birds. Entries based on a sample size of three or fewer individuals report individual weights.

Species	Sex (*n*)	Mean ± SD (range)	First quartile	Third quartile
Accipiter striatus	U (3)	95.2, 102.2, 110.4		
Patagioenas (*Columba*) *fasciata*	F (1)	250.0		
	U (1)	262.3		
Megascops (*Otus*) *albogularis*	F (1)	166.2		
	M (1)	171.4		
	U (23)	158.5 ± 12.3 (136.6–180.9)	150.9	165.0
Glaucidium jardinii	F (3)	68.7, 60.7, 54.6		
	M (7)	62.2 ± 7.3 (54.9–77.4)	58.3	63.1
	U (12)	66.9 ± 7.3 (53.6–79.5)	62.5	70.7
Asio stygius	U (1)	408.0		
Aegolius harrisii	F (2)	118.9, 129.4		
	M (1)	124.2		
	U (1)	120.9		
Caprimulgus longirostris	F (4)	44.7 ± 5.1 (39.6–51.4)	41.4	47.3
	M (4)	44.7 ± 2.5 (42.2–48.1)	43.2	45.8
	U (1)	42.0		
Doryfera ludoviciae	M (1)	6.0		
	U (17)	6.0 ± 0.3 (5.1–6.1)	5.4	5.8
Colibri thalassinus	U (12)	4.8 ± 0.4 (4.2–5.6)	4.6	5.1
Colibri coruscans	F (1)	6.0		
	M (1)	5.8		
	U (16)	6.7 ± 1.0 (3.8–8.3)	6.4	7.1
Adelomyia melanogenys	U (1)	3.5		
Heliodoxa rubinoides	F (1)	7.5		
Lafresnaya lafresnayi	F (27)	5.1 ± 0.3 (4.5–5.5)	4.9	5.3
	M (6)	5.3 ± 0.2 (5.0–5.5)	5.3	5.5
	U (1)	5.2		
	C (24)	5.1 ± 0.3 (4.5–5.5)	5.2	5.4
Coeligena prunellei	U (1)	6.4		
Coeligena torquata	F (6)	6.2 ± 0.7 (5.1–6.9)	5.8	6.8
	M (32)	7.3 ± 1.3 (3.8–12.9)	6.8	7.8
		U (1)	7.1	
	C (39)	7.1 ± 1.3 (3.8–12.9)	7.0	7.5
Coeligena bonapartei	F (94)	6.4 ± 0.6 (3.3–8.5)	6.1	6.6
	M (124)	6.6 ± 0.6 (5.3–10.1)	6.3	6.8
	U (6)	6.5 ± 0.5 (6.0–7.0)	6.0	6.9
	C (224)	6.5 ± 0.6 (3.3–10.1)	6.4	6.7
Ensifera ensifera	M (2)	10.4, 10.0		
	U (3)	10.9, 10.2, 10.1		
Boissonneaua flavescens	U (12)	8.2 ± 0.4 (7.3–8.8)	8.0	8.5
Heliangelus exortis	F (28)	4.4 ± 0.3 (4.0–5.2)	4.2	4.6
	M (115)	4.8 ± 0.6 (3.5–8.5)	4.5	5.0

	U (4)	4.5 ± 0.5 (3.9–5.2)	4.2	4.8
	C (147)	4.7 ± 0.6 (3.5–8.5)	4.7	5.0
Eriocnemis vestita	F (37)	4.6 ± 0.3 (3.6–5.3)	4.5	4.8
	M (43)	4.8 ± 0.6 (3.3–7.2)	4.5	4.9
	U (7)	4.9 ± 0.4 (4.1–5.2)	4.7	5.2
	C (87)	4.7 ± 0.5 (3.3–7.2)	4.6	4.9
Eriocnemis cupreoventris	F (1)	4.4		
	U (13)	5.3 ± 0.3 (4.7–5.8)	5.2	5.4
Ocreatus underwoodii	F (3)	3.1, 2.7, 2.7		
	M (2)	2.5, 2.7		
	U (1)	3.0		
Lesbia nuna	F (2)	3.1, 3.9		
	M (1)	3.5		
Metallura tyrianthina	F (25)	3.3 ± 0.3 (2.8–4.2)	3.1	3.4
	M (27)	3.5 ± 0.4 (2.9–4.8)	3.3	3.5
	C (52)	3.4 ± 0.4 (2.8–4.8)	3.3	3.5
Aglaiocercus kingi	M (2)	5.6, 5.1		
Aulacorhynchus prasinus	F (5)	157.4 ± 8.5 (145.1–166.1)	153.7	164.2
	M (9)	148.8 ± 11.5 (134.8–169.6)	142.5	152.0
	U (7)	157.0 ± 13.3 (142.6–176.0)	147.4	165.4
Piculus rivolii	F (1)	113.2		
	M (1)	109.5		
	U (1)	117.2		
Veniliornis fumigatus	F (1)	43.3		
	M (8)	41.5 ± 1.8 (39.3–44.3)	39.7	42.5
Dendrocincla tyrannina	M (1)	47.2		
Xiphocolaptes promeropirhynchus	F (2)	109.4, 121.7		
	M (1)	102.9		
	U (7)	118.7 ± 7.4 (108.2–126.5)	114.0	124.0
Lepidocolaptes lacrymiger (*affinis*)	F (4)	34.8 ± 4.7 (29.5–40.9)	32.7	36.5
	M (6)	35.0 ± 5.1 (30.4–43.7)	32.2	37.2
	U (2)	33.7, 36.2		
Synallaxis unirufa	F (21)	17.9 ± 2.4 (15.2–27.6)	16.9	18.3
	M (16)	17.9 ± 1.1 (15.6–20.2)	17.4	18.4
	U (32)	17.9 ± 2.1 (16.9–26.4)	17.0	17.9
	C (69)	17.9 ± 2.0 (15.3–27.6)	17.8	18.3
Hellmayrea gularis	M (1)	12.8		
Margarornis squamiger	F (6)	18.9 ± 3.5 (16.0–25.8)	17.1	18.7
	M (2)	17.8, 18.7		
	U (3)	17.6, 19.0, 22.0		
Premnoplex brunnescens	U (1)	13.4		
Pseudocolaptes boissonneautii	F (5)	44.0 ± 4.4 (39.1–50.8)	41.6	45.1
	M (5)	45.0 ± 4.6 (41.0–51.6)	41.4	47.9
	U (6)	42.9 ± 2.6 (40.9–47.5)	41.3	43.7
Syndactyla subalaris	F (1)	27.5		
Thripadectes holostictus	F (8)	40.8 ± 2.4 (38.4–45.6)	39.1	41.9
	M (15)	40.5 ± 3.5 (32.6–45.3)	39.3	42.8
	U (5)	41.1 ± 2.8 (37.7–44.6)	39.0	42.7
	C (28)	40.7 ± 3.0 (32.6–45.6)	40.7	42.5

Grallaria squamigera	F (1)	129.1		
Grallaria ruficapilla	F (3)	79.1 ± 2.8 (76.4–81.9)	77.7	80.5
	F*	85.6		
	M (2)	76.3, 89.8		
	U (2)	69.9, 87.6		
Grallaricula nana	F (3)	19.3, 20.0, 20.1		
	M (5)	19.4 ± 0.9 (18.3–20.3)	15.3	20.3
Scytalopus griseicollis	M (2)	21.8, 19.6		
Scytalopus unicolor	F (8)	16.8 ± 1.6 (15.3–19.0)	15.5	17.9
	M (6)	18.5 ± 0.8 (17.6–19.3)	17.9	19.1
	U (4)	18.4 ± 2.3 (16.1–20.3)	16.6	20.3
Ampelion rubrocristatus	M (1)	61.3		
Pipreola riefferii	F (5)	48.9 ± 3.0 (44.2–52.0)	47.7	50.6
	M (3)	49.8, 49.9, 54.0		
	U (1)	46.9		
Phyllomyias nigrocapillus	F (3)	9.9, 8.9, 8.9		
	M (8)	9.4 ± 0.3 (9.0–9.8)	9.1	9.7
	U (6)	9.9 ± 0.6 (8.8–10.4)	9.6	10.4
Elaenia frantzii	F (1)	10.9		
	M (3)	16.3, 15.8, 14.7		
Mecocerculus leucophrys	F (19)	11.6 ± 1.1 (9.9–14.0)	10.9	12.4
	F*	14.6		
	M (11)	12.1 ± 1.4 (9.6–14.5)	11.5	12.9
	U (12)	11.6 ± 1.3 (9.6–13.9)	10.5	12.4
	C (42)	11.7 ± 1.2 (9.6–14.5)	11.7	12.5
Anairetes agilis	F (2)	11.7, 10.4		
	M (1)	11.3		
	U (4)	9.3 ± 2.1 (6.2–10.9)	8.5	10.7
Myiophobus pulcher	M (2)	10.0, 9.5		
Pyrrhomyias cinnamomeus	U (1)	9.3		
Empidonax traillii	U (1)	14.9		
Ochthoeca diadema	F (13)	10.9 ± 1.0 (9.0–12.6)	10.4	11.9
	M (29)	11.6 ± 0.8 (9.5–12.8)	11.0	12.2
	U (30)	11.3 ± 0.8 (9.7–12.8)	10.6	12.0
	C (72)	11.4 ± 0.9 (9.0–12.8)	11.6	12.0
Myiotheretes fumigatus	M (4)	33.0 ± 1.3 (31.6–34.6)	32.1	34.1
	U (1)	34.6		
Cinnycerthia unirufa	F (36)	29.8 ± 2.9 (24.1–36.8)	27.9	31.3
	M (76)	31.0 ± 2.6 (24.4–36.2)	29.4	32.8
	U (81)	29.4 ± 2.7 (23.0–36.9)	27.9	30.8
	C (193)	30.1 ± 2.8 (23.0–36.9)	30.0	31.6
Cinnycerthia peruana	F (3)	26.2, 23.0, 22.9		
	U (4)	26.0 ± 1.4 (24.3–27.2)	25.1	27.0
Troglodytes aedon	M (1)	9.9		
Troglodytes solstitialis	F (2)	12.4, 11.0		
	M (1)	11.3		
	U (1)	10.8		
Henicorhina leucophrys	F (7)	16.2 ± 0.6 (15.6–17.1)	15.8	16.5
	M (25)	17.1 ± 0.9 (15.2–18.8)	16.6	17.7

	U (16)	16.6 ± 0.9 (14.9–18.2)	16.1	17.1
	C (48)	16.8 ± 0.9 (14.9–18.8)	16.7	17.2
Catharus ustulatus	F (2)	26.9, 27.5		
	U (14)	29.6 ± 4.0 (22.4–36.5)	28.6	32.3
Turdus fuscater	M (1)	138.1		
	U (3)	140.5, 141.3, 168.8		
Vireo olivaceus	M (1)	14.1		
Amblycercus holosericeus	M (2)	44.3, 45.2		
	U (1)	46.8		
Dendroica fusca	F (2)	8.9, 9.0		
	M (1)	10.1		
	U (3)	9.0, 9.6, 10.0		
Myioborus ornatus	F (2)	11.8, 12.2		
	M (4)	11.4 ± 0.7 (10.8–12.3)	11.0	11.8
	U (6)	11.8 ± 0.9 (10.8–13.1)	11.2	12.4
Basileuterus luteoviridis	F (3)	13.5, 12.8, 13.4		
	M (2)	13.8, 15.0		
	U (5)	14.9 ± 1.3 (13.3–16.6)	13.9	15.8
Basileuterus nigrocristatus	F (19)	13.2 ± 1.0 (11.1–15.6)	12.6	13.5
	F*	19.4		
	M (45)	14.0 ± 1.0 (11.8–16.6)	13.2	14.5
	U (15)	14.9 ± 2.4 (11.7–19.8)	12.8	16.5
	C (79)	13.9 ± 1.4 (11.1–19.8)	13.7	14.6
Basileuterus coronatus	F (7)	16.4 ± 1.5 (15.2–18.6)	15.5	17.4
	M (14)	17.5 ± 1.6 (14.2–19.7)	16.5	18.8
	U (9)	17.0 ± 1.8 (14.4–19.9)	15.7	18.1
	C (30)	17.1 ± 1.7 (14.2–19.9)	16.9	18.6
Conirostrum sitticolor	F (3)	11.2, 11.2, 11.9		
	M (3)	11.8, 11.8, 13.7		
	U (3)	9.6, 11.3, 14.2		
Conirostrum albifrons	F (2)	13.3, 11.7		
	M (1)	13.0		
Diglossa caerulescens	F (12)	14.3 ± 1.1 (12.9–15.6)	13.3	15.3
	M (23)	14.6 ± 0.6 (13.5–15.8)	14.4	15.0
	U (27)	14.5 ± 0.8 (13.1–16.2)	14.0	15.2
	C (62)	14.5 ± 0.8 (12.9–16.2)	14.5	15.1
Diglossa cyanea	F (23)	16.7 ± 1.0 (15.4–19.0)	15.9	17.2
	M (51)	17.4 ± 1.1 (14.9–19.6)	16.9	17.9
	U (31)	16.7 ± 1.1 (14.8–19.1)	16.1	17.2
	C (105)	17.0 ± 1.1 (14.8–19.6)	17.0	17.7
Diglossa humeralis	F (4)	13.0 ± 0.6 (12.4–13.6)	12.6	13.4
	M (11)	13.3 ± 1.0 (12.0–15.4)	13.0	13.9
	U (5)	12.4 ± 1.0 (11.1–13.3)	11.7	13.2
Diglossa albilatera	F (87)	9.5 ± 0.8 (8.0–11.4)	9.0	10.0
	F*	12.6		
	M (118)	10.2 ± 0.8 (8.5–12.7)	9.7	10.6
	U (22)	9.5 ± 0.6 (8.4–10.6)	9.0	10.1
	C (227)	9.9 ± 0.8 (8.0–12.7)	9.8	10.4
Pipraeidea melanonota	F (1)	18.1		

Tangara nigroviridis	F (2)	16.1, 16.3		
	U (1)	16.5		
Tangara vassorii	F (4)	18.4 ± 0.6 (17.6–18.8)	18.4	18.7
	M (22)	17.5 ± 0.8 (16.1–18.9)	16.9	17.8
	U (7)	17.0 ± 1.1 (15.6–18.6)	16.2	17.7
	C (33)	17.5 ± 0.9 (15.6–18.9)	17.6	18.0
Anisognathus igniventris	F (13)	36.4 ± 2.6 (33.4–41.0)	34.2	38.9
	F*	43.7		
	M (41)	37.1 ± 2.0 (32.6–41.6)	34.3	39.1
	U (20)	36.9 ± 2.3 (28.6–40.4)	36.0	38.4
	C (74)	36.8 ± 2.3 (28.6–41.6)	37.3	38.4
Buthraupis eximia	F (1)	53.9		
	M (1)	47.3		
Dubusia taeniata	F (3)	34.8, 40.3, 44.5		
	M (8)	40.3 ± 1.8 (37.9–42.0)	38.4	41.9
	U (2)	38.6, 40.3		
Thraupis cyanocephala	F (4)	35.4 ± 3.2 (31.7–38.2)	33.3	38.0
	M (4)	33.3 ± 0.4 (32.7–33.6)	33.2	33.5
	U (1)	34.6		
Chlorospingus ophthalmicus flavopectus	F (45)	22.1 ± 1.7 (19.5–26.7)	21.0	22.5
	M (68)	24.4 ± 2.1 (19.1–28.4)	23.1	25.8
	U (31)	22.5 ± 1.8 (19.4–25.5)	21.1	24.0
	C (144)	23.2 ± 2.2 (19.1–28.4)	23.2	24.8
Hemispingus atropileus	F (15)	23.5 ± 2.5 (20.3–30.7)	22.2	23.9
	M (21)	21.5 ± 1.7 (17.7–24.3)	21.5	23.2
	U (5)	21.2 ± 1.0 (21.1–23.7)	21.2	22.1
	C (41)	22.6 ± 2.1 (17.7–30.7)	21.5	23.5
Hemispingus superciliaris	F (1)	13.9		
	M (6)	18.0 ± 4.6 (13.7–23.9)	14.9	21.8
	U (4)	15.5 ± 1.7 (13.0–16.6)	15.3	16.3
Hemispingus melanotis	F (12)	18.9 ± 1.6 (16.8–21.2)	17.6	20.4
	M (21)	18.6 ± 1.8 (12.8–20.9)	18.2	19.7
	U (7)	18.7 ± 1.3 (16.9–20.8)	18.0	19.3
	C (40)	18.7 ± 1.6 (12.8–21.2)	18.8	19.7
Hemispingus verticalis	M (1)	14.1		
	U (2)	15.4, 15.7		
Cnemoscopus rubrirostris	F (1)	21.2		
Chlorornis riefferii	F (5)	51.6 ± 3.6 (45.5–54.7)	45.5	51.5
	M (12)	54.2 ± 2.9 (50.1–59.7)	54.3	52.3
	U (2)	52.9, 52		
Catamblyrhynchus diadema	M (3)	15.0, 16.8, 16.9		
Pheucticus aureoventris	F (1)	58.4		
	M (6)	61.9 ± 3.8 (55.4–66.2)	60.5	64.1
Atlapetes pallidinucha	F (6)	33.1 ± 4.9 (24.9–38.3)	32.0	36.8
	M (19)	36.1 ± 4.2 (21.4–40.2)	35.7	38.6
	U (6)	35.7 ± 1.4 (34.4–38.1)	34.7	36.0
	C (31)	35.4 ± 4.0 (21.4–40.2)	36.1	38.1
Atlapetes albofrenatus	U (1)	27.9		
Atlapetes schistaceus	F (32)	29.5 ± 2.8 (25.5–38.8)	28.1	30.8

	M (86)	29.9 ± 2.7 (22.6–43.9)	28.6	30.7
	U (22)	29.5 ± 2.3 (26.1–35.5)	27.8	30.9
	C (140)	29.8 ± 2.6 (22.6–43.9)	29.4	30.7
Buarremon (*Atlapetes*) *brunneinucha*	M (6)	45.0 ± 0.7 (44.1–45.7)	44.5	45.5
Buarremon (*Atlapetes*) *torquatus*	F (16)	40.9 ± 3.1 (35.9–45.3)	38.3	43.0
	M (47)	40.5 ± 2.9 (32.2–44.9)	39.8	42.1
	U (5)	41.5 ± 3.4 (35.9–44.5)	41.0	43.9
	C (68)	40.7 ± 2.9 (32.2–44.3)	41.2	42.5
Haplospiza rustica	F (6)	15.9 ± 1.0 (14.4–17.1)	15.3	16.5
	M (1)	15.5		
	U (1)	15.3		
Zonotrichia capensis	F (2)	19.2, 19.9		
	M (6)	21.6 ± 1.1 (16.9–22.9)	21.4	22.2
Carduelis (*Spinus*) *spinescens*	U (1)	11.3		

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The Pacific shrikebills (*Clytorhynchus*) and the case for species status for the form *sanctaecrucis*

by Guy Dutson

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Shrikebills constitute a poorly known genus (*Clytorhynchus*) of Pacific island forest birds, ranging from the Solomon Islands to New Caledonia and American Samoa. This review updates all aspects of their conservation ecology, including taxonomy and identification. Data sources are BirdLife International's field work in Fiji (totalling 43 surveys, mostly spending 2–5 days in old-growth forest, plus incidental records over three years, as reported in BirdLife International 2006); my own field work on Rennell and Nendo (=Ndeni) in the Solomon Islands, Santo, Éfaté and Erromango in Vanuatu, and New Caledonia; examination of specimens in the American Museum of Natural History (AMNH, New York) and Natural History Museum (NHM, Tring); and a review of the published literature.

The genus *Clytorhynchus*

Clytorhynchus is a genus of Monarchidae, closely related to *Mayrornis*, *Neolalage*, *Pomarea* and *Chasiempis*, which together form a clade of Polynesian taxa (Filardi & Moyle 2005). Mayr (1933) characterised *Clytorhynchus* as having a bill that is 'compressed laterally, has a hook and reaches an enormous size in the larger species of the genus.' He subdivided it into small forms, the *C. vitiensis* superspecies comprising Southern Shrikebill *C. p. pachycephaloides* on New Caledonia, *C. p. grisescens* on Vanuatu, and 11 subspecies of the Lesser (or Fiji) Shrikebill *C. vitiensis* on Fiji, Tonga, Wallis and Futuna and on American Samoa, and the large forms, comprising Black-faced Shrikebill *C. n. nigrogularis* on Fiji, *C. n. sanctaecrucis* on Nendo in the Santa Cruz archipelago, and Rennell Shrikebill *C. hamlini* on Rennell in the south-east Solomons. *C. nigrogularis*, *sanctaecrucis* and *hamlini* have boldly patterned plumage, the first two are sexually dichromatic, and *hamlini* has a slightly duller female, whilst *vitiensis* and *pachycephaloides* are plain brown and sexually monochromatic. Discussing the races of *C. vitiensis*, Mayr noted 'One can distinguish four extremes on the four corners of the range of this species within Fiji but the birds from all the other islands combine characters of all these four races. It is somewhat a matter of opinion to which subspecies the populations of some of the islands should be referred, and also whether or not additional races should be described from intermediate localities.' There have been no reviews of the genus since Mayr (1933), and Watling (2001) noted that the subspecific taxonomy of *vitiensis* is still uncertain.

Ecology

Shrikebills are all territorial insectivores of forest understorey and midstorey. They differ from most other Monarchidae in often searching dead wood and clusters of dead leaves, using their heavy bills to crunch through these tangles, as described by Clunie (1984) and Bregulla (1992). All occur in closed-canopy wet forest at all altitudes, except *vitiensis* which also occurs in drier forests, on smaller islands and in heavily degraded forest and mangrove. Clunie (1984) also reported *nigrogularis* from mangrove, but this observation has not been repeated. Most shrikebills occur on islands with low mountains and little avifaunal variation with altitude, such that *nigrogularis* and *vitiensis* have been seen to *c.*1,200 m on Fiji's highest peak, of 1,324 m (Gorman 1975), but *pachycephaloides* no higher than *c.*1,000 m on Vanuatu's highest peak, of 1,879 m. *C. nigrogularis* and *sanctaecrucis* males often shiver lowered wings, sometimes leading to their also lowering the head into a horizontal posture, when engaged in antagonistic behaviour displaying at another male (or tape-recording). *C. pachycephaloides* and *sanctaecrucis* are the only taxa to often cock their tails. *C. nigrogularis* and *sanctaecrucis* are the only forms to be usually seen alone or in pairs, rarely in mixed-species flocks like the others.

Vocalisations

Shrikebills are often first detected by their loud calls. All have similar mournful whistles, *c.*1–2 seconds long, and repeated regularly. These are sometimes monotone but often increase in volume, sometimes rise or descend in tone, and are often quavering. They also give typical monarch scolds, usually deeper and harsher than sympatric monarchs (e.g. Slaty Monarch *Mayrornis lessoni*). *C. hamlini*, *nigrogularis* and *sanctaecrucis* have a much wider range of complex whistles and harsher chatters. The most varied whistles are given by territorial males, which often call vigorously for long periods, these whistles presumably representing the territorial song. Short phrases of a whistle or scold, or combination, are usually repeated for one to a few minutes then replaced by another phrase. Males respond to playback of recordings, especially of the song. Some typical calls of *nigrogularis and vitiensis* are discussed in Bailey (1991). *C. nigrogularis* appears more vocal and much more easily observed in October–December; all previous breeding records are in August–December (Watling 2001). The highest counts of *nigrogularis* are six pairs at Garrick Memorial Reserve in November 2002 (pers. obs.), and five males and two females seen and others heard on Mt. Tomanivi in December 1993 (R. Thomas *in litt.*).

Identification of *nigrogularis* and *vitiensis*

C. nigrogularis and *vitiensis* are the only sympatric shrikebills, in the wet forests of Fiji's five largest islands (Viti Levu, Vanua Levu, Taveuni, Kadavu and Ovalau). Most adult male *nigrogularis* have distinctive plumage, with black on the head and

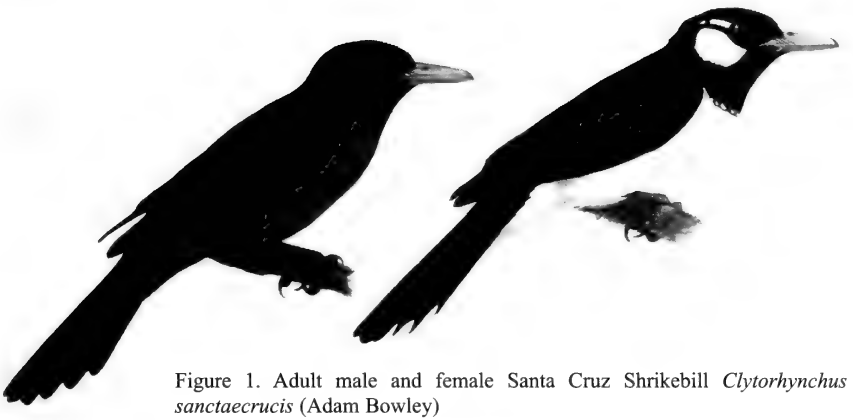

Figure 1. Adult male and female Santa Cruz Shrikebill *Clytorhynchus* (*n.*) *sanctaecrucis* (Adam Bowley)

Figure 2. Adult male and female Black-faced Shrikebill *Clytorhynchus nigrogularis* (Chloe Talbot-Kelly)

Figure 3. Adult Lesser Shrikebill *Clytorhynchus vitiensis* (Chloe Talbot-Kelly)

face, a white ear-coverts patch, and sometimes washed grey, especially on the crown. Some adult males, many immature males and a few adult females are intermediate between this plumage and the plain female plumage. The proportion of males attaining such plumage may vary between islands, as none of the four males taken on Kadavu by the Whitney South Seas expedition had it (Mayr 1933). Plain female and immature *nigrogularis* are very similar to *vitiensis* and can only be identified with care (Watling 2001). The two species also have very similar ecology. Based on my observations of 23 individual *nigrogularis* (but only seven females) and museum specimens, the identification features are listed in Table 1 in descending order of significance or ease of use.

TABLE 1
Identification features of *C. nigrogularis* and *vitiensis*.

Feature	***C. nigrogularis***	***C. vitiensis***
Male plumage	Distinctive.	Plain, as female.
Calls	Most calls louder or stronger. Male territorial call is repeated phrases of several harsh notes followed by one or a series of long whistles, often upslurred.	Standard generic calls. Whistles usually shorter and quieter. Harsh notes, given as contact- / alarm-calls or preceding whistles in territorial phrases, are softer—similar to Slaty Monarch *Mayrornis lessoni.*
Bill size	Heavy, with strongly curved distal half of the bill.	Light, with straight lower mandible, almost parallel to upper mandible.
Bill pattern	Pale tip, sometimes extending on cutting edges. Upper mandible always has pale tip, and lower mandible usually has one, varying from just the very tip to an extension along the cutting edges almost to the bill base.	Pale cutting edges, the band becoming narrower towards the bill tip and not extending onto the very tip. A few have an all-dark bill. Note subspecific variation, e.g. *C. v. compressirostris* on Kadavu has broader white cutting edges.
Size	Large and bulky. Length = 21 cm, intermediate between Red-vented Bulbul *Pycnonotus cafer* (20 cm) and Island Thrush *Turdus poliocephalus* (22 cm).	Medium-sized and less bulky. Length = 19 cm, similar to Wattled Honeyeater *Foulehaio carunculata.*
Pale tail tips	Small buffy tips to outer tail-feathers.	Variable; often has large whitish tail tips but sometimes invisible. Note subspecific variation, e.g. *C. v layardi* on Taveuni has less distinct tail tips.
Female plumage	Some have greyish-washed underparts.	Underparts paler but similar colour to upperparts.
Behaviour	Shyer and more cryptic than most Fijian birds. Rather sluggish.	As confiding and active as most Monarchidae.
Ecology	Singles or in pairs, usually alone but sometimes (especially female-plumaged birds) loosely associated with mixed-species flocks. Male usually calls from lower canopy.	Usually encountered in mixed flocks, sometimes in loose groups of 3–4 birds. Calls from midstorey.

Taxonomy of *Clytorhynchus nigrogularis* and *C. (n.) sanctaecrucis*

Clytorhynchus nigrogularis sanctaecrucis Mayr, 1933, was described, from two specimens collected in 1927 from Nendo (Santa Cruz Islands, Solomon Islands), as a subspecies of the previously monotypic Black-faced Shrikebill *C. nigrogularis* (E. L. Layard, 1875) from Fiji. The type-description was based on what was believed to be an adult male, but noted as 'possibly not yet reached the fully adult plumage; a small grayish patch before the eye, a few scattered white feathers on the throat, and the buffy tinge of the ear-coverts seem to indicate this', and brief notes on the second specimen, an 'immature' male (Mayr 1933). Mayr noted that 'It is very distinct and would probably be regarded as a species by many conservative ornithologists. The bill on the new form is more than proportionally smaller and decidedly less heavy than in *nigrogularis*. It is less deep and gives an impression of greater slenderness. The colour pattern of the two forms, however, is essentially the same' (Mayr 1933).

However the two male *sanctaecrucis* seen on 4–5 October 2004 (pers. obs.) were very different to the types, having plumage analogous to adult *nigrogularis*. Male *sanctaecrucis* and *nigrogularis* are believed to take two years to reach adult plumage, and some male *nigrogularis* might never attain full plumage, whereas females may attain some male plumage (Mayr 1933). This supports Mayr's suggestion that the type-specimen of *sanctaecrucis* is not in full adult male plumage. The two pairs seen in 2004 were the first records of *sanctaecrucis* since the 1927 specimens and indicate that clear differences exist between *nigrogularis* and *sanctaecrucis*, as listed in Table 2.

Mayr's (1933) classification of *sanctaecrucis* as a race of *nigrogularis* must be revised based on my sightings and current attitudes towards species-level taxonomy. As the differences noted between *sanctaecrucis* and *nigrogularis* are significantly greater than the differences between *vitiensis* and *pachycephaloides*, and much greater than the intraspecific variation shown by any congener, I propose that *sanctaecrucis* be recognised specifically under the Biological Species Concept as: Santa Cruz Shrikebill *Clytorhynchus sanctaecrucis*

Description of Santa Cruz Shrikebill *Clytorhynchus sanctaecrucis*

The following is based on prolonged observation of two pairs of *sanctaecrucis* at close range. Males were almost pied, with silky white underparts from upper breast to vent, and a large white circular or pentagonal ear-coverts patch. One had a very fine white supercilium from behind the eye to the rear of the ear-coverts patch and tiny white terminal tips to the outer two pairs of rectrices, the other had no supercilium, tips >5 mm on the outer three pairs and tiny tips to all other rectrices, and a slightly smaller ear-coverts patch. The lores, throat and breast-band were jet black with a slight blue gloss and the rest of the head was slightly duller black. The rest of the upperparts were

TABLE 2
Differences between *C. nigrogularis* and *sanctaecrucis*.

Feature	*C. nigrogularis*	*C. (n.) sanctaecrucis*
Size: wing-length	100–110 mm (*n*=25 males; Mayr 1933)	90 and 91 mm (*n*=2 males; Mayr 1933)
tail-length	79–92 mm (*n*=25 males; Mayr 1933)	72 and 72 mm (*n*=2 males; Mayr 1933)
Culmen-length	26.2–30.2 mm (*n*= 25 males; Mayr 1933)	23.3 and 24.1 mm (*n*=2 males; Mayr 1933)
Bill-depth at nostrils	8.7–9.3 mm (*n*= 3; own measurements)	6.4 mm (holotype; own measurements)
Bill shape	Heavy, with strongly curved distal half of bill, especially gonys	Shallow, with almost parallel edges, similar in proportion to *vitiensis*
Bill colour	Black with a variably sized pale horn-coloured tip	Blue-grey with a black nail
Male crown colour	Grey or brown	Black, as rest of head
Male mantle, wings and tail	Variably greyish brown	Sooty
Male underparts and tail-tip spots	Variably pale greyish buff	Silky white
Female plumage	Dull cold brown, much paler on underparts	Uniformly rufous-brown
Foraging height	Never been seen on ground and rarely within 2 m of it (except for an unreferenced comment in Pratt *et al.* 1987)	One pair, especially the male, spent half of their active foraging time within 2 m of ground and significant periods on ground, tossing aside leaves
Tail-cocking	Never been seen to cock its tail; only seen to raise tail in antagonistic displays	Both pairs seen in 2004 often raised their tails and males often cocked their tails, especially during antagonistic calling
Shyness	Shy; invariably calls from concealed perch and flees approaching observer	Confiding; often perched on exposed understorey branches and allowed observer to within 2–3 m

sooty with a slight blue-green gloss and blacker rectrices. Females were uniform rufous-brown with slightly paler lores, around the eye, throat and underparts, and a noticeably paler central belly. All had similar bare parts: bill blue-grey with a black nail, legs slightly darker grey-blue and irides dark. Two males are described in Mayr (1933) and deposited in AMNH; both show signs of immaturity. Contact- and territorial-calls of male *sanctaecrucis* are very similar to those of *nigrogularis*. Given the variation in calls in the limited series of tape-recordings from a single *sanctaecrucis* (deposited at the British Library, London, UK), it is probable that the vocalisations are difficult to distinguish from *nigrogularis*.

Biogeography

The Santa Cruz group (or Temotu Province) of the Solomon Islands have three endemic bird species, Santa Cruz White-eye *Zosterops sanctaecrucis* and Sanford's

White-eye *Woodfordia lacertosa* on Nendo, and Vanikoro Monarch *Mayrornis schistaceus* on Vanikoro. BirdLife International combined the Santa Cruz Islands with Vanuatu as an Endemic Bird Area, as another four species occur only on these two island groups (Stattersfield *et al.* 1998). However, the Santa Cruz Islands also have close biogeographic links with Fiji *c.*1,400 km to the east; Vanikoro Flycatcher *Myiagra vanikorensis* is restricted to Vanikoro, in Santa Cruz, and Fiji, whilst Polynesian Starling *Aplonis tabuensis* occurs on these islands and east to Samoa, and the genus *Mayrornis* is restricted to Vanikoro (*M. schistaceus*) and Fiji (*M. lessoni* and *M. versicolor*). Given the additional species of *C. sanctaecrucis* and a new white-eye *Zosterops* species (pers. obs.), the Santa Cruz Islands could be reclassified as an Endemic Bird Area, independent of Vanuatu. The Santa Cruz group is an isolated province of the Solomon Islands with no conservation action, but the forest is subject to few current threats.

The discovery of the adult male plumage of *C. sanctaecrucis* may also shed some light on the evolutionary history of the genus. *Clytorhynchus* is believed to be phylogenetically closest to *Mayrornis* of Santa Cruz and Fiji, and *Neolalage* of Vanuatu (Filardi & Moyle 2005). Male *C. sanctaecrucis* is the most distinct of the genus, and is pied and patterned similar to *Neolalage* and many distantly related *Monarcha* species, such as on the Solomons immediately west of Nendo. It seems most likely that shrikebills (and perhaps *Mayrornis*) evolved in the Santa Cruz Islands, and radiated south and east.

Encounter rates and population density

The BirdLife International Fiji Important Bird Areas project surveyed birds across Fiji in 2002–05, including standardised observations at 43 sites (BirdLife International 2006). Encounter rates for *C. nigrogularis* and *C. vitiensis* are presented in Table 3.

Comparative encounter rates are given for the other shrikebill species. These data are from the author's unpublished observations and are comparable to the BirdLife Fiji surveys (above), but encounter rates are likely to be lower as they include time in suboptimal habitat and outside the standard survey hours of dawn to 10.00 and 15.00 to dusk.

These encounter rates can only be converted to population densities with extreme caution as detectability distances away from the trail and the proportion of birds overlooked have not been estimated. Most shrikebills are detected when calling, with an effective detection distance of 25–50 m either side of the trail, and most surveys were undertaken at a mean pace of 1 km / hour. This suggests that 1–20 shrikebills were detected per km^2 (birds / hour, above, multiplied by 10–20 hours / km^2). There are a number of probable errors in this estimate, especially the number of silent birds overlooked. The only published estimates of population density for shrikebills vary at 9–107 birds / km^2 for *vitiensis* on different American Samoan islands (Engbring & Ramsay 1989). These very approximate population

TABLE 3
Encounter rates for *C. nigrogularis* and *C. vitiensis*.

Island and number of standardised observer-hours	***C. nigrogularis***	***C. vitiensis***	**Unidentified calls: mostly *C. vitiensis* but some *C. nigrogularis***
Viti Levu			
271 hours	37 (=0.14 / hour) at 13/19 sites	171 (=0.63 / hour) at 17/19 sites	92 (=0.34 / hour) at 16/19 sites
Vanua Levu			
155 hours	7 (=0.05 / hour) at 5/11 sites	74 (=0.48 / hour) at 11/11 sites	85 (=0.55 / hour) at 10/11 sites
Taveuni			
19.3 hours	5 (=0.3 / hour) at 1/1 sites	6 (=0.3 / hour) at 1/1 sites	12 (=0.6 / hour) at 1/1 sites
Kadavu and **Ovalau**			
53 hours	0 at 0/3 sites*	30 (=0.56 / hour) at 3/3 sites	14 (=0.26 / hour) at 1/3 sites
All islands	49 (=0.10 / hour) at 19/34 sites	281 (=0.56 / hour) at 32/34 sites	203 (=0.41 / hour) at 28/34 sites

*none seen in many tens of additional non-standardised hours, but one seen in 2000.

densities can be extrapolated to the total area of suitable habitat to give an equally approximate indication of the species' population size.

Conservation status

The IUCN / BirdLife Red List is based on objective criteria published by IUCN and BirdLife International (www.redlist.org). The only shrikebill previously listed as threatened was *C. nigrogularis*. The BirdLife surveys have found *nigrogularis* at many additional sites but confirmed its low tolerance of heavily logged or degraded forest. The data suggest that the species should remain categorised as Vulnerable but under criterion C1 (continuing decline >10% in 10 years or three generations) on the assumption that it is declining at the same rate as forest loss and degradation, which is estimated to be *c.*0.5–0.8 % per year (Claasen 1991) and which equates to 6–10% over 12 years (estimating generation length as four years, based on Australian monarchs), whilst the total population is estimated at 2,500–10,000 birds using the encounter rates above and an estimate that the bird occurs in *c.*50% of the forest within its range. Although generally uncommon or rare, one or two can be heard most days in the central hills between the Nausori Highlands to Nadrau and Monasavu, and it can be more obvious than *vitiensis* when calling in November/December. The species' rarity on Vanua Levu and especially Kadavu and Ovalau merits further research.

TABLE 4
Encounter rates for other shrikebill species.

Island and year	Species	Number of hours (not standardised)	Number of birds
Santa Cruz (1997, 2004)	*C. (n.) sanctaecrucis*	6 hours in old-growth forest; 18 hours in closed secondary forest	4 (=0.7 / hour in old-growth forest; 0.17 / hour in all forest)
Rennell (1998, 2002, 2004)	*C. hamlini*	58 hours	41 (=0.71 / hour)
Santo, Vanuatu (1997, 2003)	*C. pachycephaloides grisescens*	20 hours <600 m; 53 hours >600 m	7 (=0.35 / hour <650 m); 2 (=0.04 / hour >650 m)
New Caledonia (1998, 2003, 2004)	*C. p. pachycephaloides*	49 hours	13 (=0.27 / hour)

C. sanctaecrucis is assessed here as Endangered (C2aii) based on an estimated population of 250–2,500 birds in a single subpopulation and an inferred ongoing decline through small-scale forest loss for subsistence farming. However the population estimate is based on few data and a poor knowledge of the area of suitable habitat on Nendo. The Whitney South Seas expedition took just two specimens in seven days. Two pairs were recorded in six hours in suitable old-growth forest in the hills inland of Luselo, Nendo, but none had been seen previously by several observers in degraded forest closer to Lata. Most local people did not know this species, but one local guide knew the bird's call to belong to an uncommon species of dense forest close to streams. The local name was reported to be 'Upalalu.' The two specimens were taken near the highest point (550 m), whereas the 2004 birds were seen at *c.*80 m. Nendo Island is 505 km^2 but the area of suitable habitat may be nearer 250 km^2. The two pairs seen in *c.*10 km or six hours suggest an extremely crude population density of 4–14 birds / km^2.

BirdLife International (2000) categorised *hamlini*, *pachycephaloides* and *vitiensis* as Least Concern, which is supported by the observations tabulated above. *C. hamlini* has been considered potentially at risk from colonisation of Rennell by Black Rats *Rattus rattus*, but other congeners show no evidence of decline from rat predation, and there is no forest clearance on Rennell. *C. pachycephaloides* is uncommon in Vanuatu, especially the southern islands (Bregulla 1992; pers. obs.) and fairly common (to uncommon) in humid forests across Grande Terre of New Caledonia (Barré & Dutson 2000, Ekstrom *et al.* 2002). Forests continue to be cleared and degraded across Vanuatu, and the conservation status of the race *griseus* is of concern. However, there is very little loss of wet forest on New Caledonia where subspecies *pachycephaloides* is more common. *C. vitiensis* is common in humid and semi-dry forests on most Fijian islands and although these are being cleared and degraded slowly, the species appears to be tolerant of logging and other

habitat degradation (Watling 2001; pers. obs.). Nonetheless, *vitiensis* has been extirpated from the Mamanucas/Yasawas in Fiji and some Tongan islands, and is categorised as At Risk in Tonga and of Conservation Concern in American Samoa (Watling 2001).

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Clarification of the type-locality of Temminck's Courser *Cursorius temminckii damarensis* Reichenow, 1900

by W. R. J. Dean

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Temminck's Courser *Cursorius temminckii* Swainson, 1822, has been treated either as monotypic (White 1965, Urban *et al.* 1986, Dickinson 2003) or polytypic with one subspecies, *damarensis* Reichenow, 1900 (Sclater 1924), or two subspecies, *ruvanensis* Madaràsz, 1915, and *aridus* Clancey 1989 (Clancey 1989, Hockey *et al.* 2005). In his review, Clancey (1989) proposed that *damarensis* was a synonym of nominate *temminckii* and that as a result a new name was required for '*damarensis*' referred to by other authors, which he then provided, *C. t. aridus*.

The type-locality of *C. t. damarensis* is given as 'Damaraland' only, usually without Namibia (Sclater 1930: 137, Peters 1934: 300, White 1965: 135, Clancey 1980: 77, Clancey 1984) following the type-description (Reichenow 1900: 156). Reichenow (1900) conditionally named *C. t. damarensis* on the basis of a paler reddish-brown crown, and no other characters. No type-specimen was designated (Clancey 1989). Clancey mistakenly noted that no type appeared to exist, overlooking the holotype in the Museum für Naturkunde of the Humboldt-University of Berlin (ZMB). No type-locality was put forward by Reichenow, but 'Damaraland' by inference has been accepted as such. 'Damaraland' is an outdated name for that part of Namibia between 19°S and 23°S, and 14°E and 20°E. According to Clancey (1989), nominate *temminckii*, *ruvanensis* and *aridus* (*damarensis*) all occur in Namibia (*contra* Hockey *et al.* 2005), but do not all overlap in 'Damaraland.' Nevertheless, it is useful to clarify the type-locality, and to provide some details of the type.

The holotype of *C. t. damarensis*, an adult female, accession number ZMB 28717 was collected by A. W. Eriksson on 15 November 1890, with locality Ochimboro (Otjimboro), Namibia. There seems little doubt that the locality is correct. Eriksson was at Otjimboro from 16 October to 15 November 1890, before moving north to Angola where he remained until early December. Relevant specimens are held in Regionmuseum Vöstra Götaland, Sweden (formerly Älvsborgs Länsmuseum) (Lundevall & Ängermark 1989), the South African Museum, Cape Town, and ZMB. A specimen of Gabar Goshawk *Micronisus gabar* (ZMB 28702), also collected on 15 November 1890, is similarly labelled Ochimboro. The type-locality of *C. t. damarensis* Reichenow can therefore be precisely identified as Otjimboro (17°25'S, 18°20'E), Namibia.

Acknowledgements

I thank Bob Dowsett for suggesting that the type-locality be clarified and for his comments on a list of type-specimens in ZMB. My visit to Berlin was made possible by funding from the Global Biodiversity Information Facility, Denmark. I thank Sylke Frahnert at ZMB for working space and access to the bird collection there.

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Is the bulbul *Phyllastrephus lorenzi* a good species?

by Lincoln D. C. Fishpool

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Sassi's Olive Greenbul *Phyllastrephus lorenzi* Sassi, 1914, is a poorly known bulbul (Pycnonotidae) of apparently limited distribution. Originally described from a specimen collected at Moera, near Beni, in eastern Democratic Republic of Congo, the relatively few subsequent records have been confined to forests of this region, with one from adjacent western Uganda. Almost all records refer to collected material, such that virtually nothing is known of the bird in life. So far as I am aware, there are 44 specimens in museums (Table 1). In the course of preparing the bulbul family account for the *Handbook of the birds of the world* (Fishpool & Tobias 2005), I examined 40 of these. As a result, I have come to the conclusion that *P. lorenzi* is almost certainly not a valid species but is, rather, synonymous with the widespread Icterine Greenbul *P. icterinus*, of which it is possibly a melanic morph. I present here the morphological evidence that has led me to this conclusion together with distributional and other data consistent with such a view.

Morphology

A brief description of *P. lorenzi* is as follows; forehead olive-brown, top of head from forecrown to nape variably mottled black and olive, blackest on crown, sometimes appearing as a well-defined cap, in other specimens merely as a less distinct darker area, limited to the hindcrown. Upperparts dark dull olive-brown, uppertail-coverts slightly more rufous, tail dark reddish brown. Throat olive-yellow, rest of underparts dirty yellowish olive-green, paler olive-yellow in centre of belly, with brownish-yellow undertail-coverts. Wings blackish brown. Bill also blackish brown, with lower mandible, cutting edges and tips paler, eye dark brown, legs greyish, greyish brown or blackish. Sexes are alike though, as in the rest of the genus, females average smaller. Fig. 1 presents what is, I believe, the first published photograph of a live bird.

The diagnostic morphological character of *P. lorenzi* is the black crown patch or cap, which is unique amongst *Phyllastrephus*. This apart, it resembles *P. icterinus* in plumage but is darker overall, with green largely replacing the yellow on the underparts of the latter, particularly the throat and belly (Fig. 2). Above, crown excepted, they are alike except that *icterinus* averages somewhat paler and shows some contrast between the rufous uppertail-coverts and rump and the olive-green of the back; *lorenzi* is more uniform olive-green washed ginger throughout, the rufous tint increasing somewhat towards the tail. Bare-part colours are similar, though the eye of *icterinus* is paler, being grey-brown or greyish.

Examination of skins of *lorenzi* reveals that the amount and intensity of black on the crown vary considerably, from extensive, bold and well defined to being confined to the hindcrown, relatively faint and merging with the olive-green coloration of the rest of the head and neck. Further, inspection of a large series of *icterinus* from eastern DR Congo, many from the *same* collecting localities as *lorenzi*, shows that the crown coloration of these is also variable, with some showing clearly perceptible black, whilst others have little or none. Thus, the two forms intergrade in this character, supposedly *lorenzi*'s most distinctive feature (Fig. 3).

It has been suggested, or at least hinted, that variation in the amount black on the crown of *lorenzi* may be age- or sex-related. Thus, Chapin (1953) states that 'the dull blackish area in the middle of the crown is well marked in both sexes, and the specimen from Ukaika with poorly developed blackish area is undoubtedly an immature male.' The Ukaika specimen is one of Sassi's two original skins and is explicitly stated by him (Sassi 1914, 1915, 1916) both to have less black on the crown than the other (male) skin, the type, and to be female; on what basis Chapin concluded it was male is unclear. Chapin seems to be implying that the crown darkens with maturity; it certainly appears that Keith (1992) understood him to have meant so since he says that the immature 'is like adult but blackish area of crown poorly developed.'

The greater number of skins now available reveal that the black crown patch may be as dark and extensive in adult females as it is in any male whilst, equally,

TABLE 1

Phyllastrephus lorenzi specimen, locality and altitude data

Locality	Locality no. on Fig. 1	Map reference	Repository	Catalogue number	Date of collection	Sex	No. of specimens	Altitude#	Reference
Examined material									
Democratic Republic of Congo									
Eastern (Orientale) Province									
Bambesa	1	03°28'N, 25°44'E	RMCA	42.742	14/03/1941	M	1	-	
Bondo-Mabe	2	02°36'N, 29°34'E	RMCA	18.895	27/07/1925	M	1	-	
Lima	5	00°54'N, 29°13'E	RMCA	101.238	18/03/1959	M	5	-	
"	"		RMCA	102.319	20/07/1959	M	-		
"	"		RMCA	102.536	25/07/1959	F	-		
"	"		RMCA	102.318	27/07/1959	F	-		
"	"		RMCA	102.331	07/09/1959	M	-		
Lalya (Lima)	6	00°52'N, 29°14'E	RMCA	106.132	06/06/1960	M	1	-	
Djuma	7	00°43'N, 29°40'E	IRSNB	50788	23/08/1954	M	1	800 m	
Manzali	8	00°42'N, 29°31'E	IRSNB	34575	30/06/1951	M	1	1,100 m	
Etâetu	11	00°18'N, 28°32'E	RMCA	106.134*	23/04/1960	F	1	-	
Kivu Province									
Hombo	12	01°52'S, 28°27'E	RMCA	122.891	23/05/1970	M	1	920 m	
Lukigi	13	02°48'S, 28°22'E	RMCA	118.869	02/03/1969	M	2	1,820 m (see text)	
"	"		RMCA	118.870	06/03/1969	F		1,300 m	
Itabe	14	03°00'S, 28°15'E	IRSNB	69190*	16/03/1985	M	3	1,030 m	
"	"		IRSNB	69189	16/03/1985	F		1,030 m	
"	"		IRSNB	69191	16/03/1985	M		1,030 m	
Migamba	15	03°00'S, 27°59'E	IRSNB	69188	06/04/1985	M	2	1,090 m	
"	"		IRSNB	69140	20/09/1984	F		1,000 m	
Kiloboze	16	03°03'S, 28°09'E	RMCA	76.22.A.48	11/04/1975	F	6	1,030 m	
"	"		RMCA	80.24.A.60	02/08/1979	M		1,060 m	
"	"		RMCA	77.14.A.46	09/03/1976	F	-		
"	"		IRSNB	64730	17/03/1981	F		1,030 m	
"	"		IRSNB	64732	11/03/1981	F		1,020 m	
"	"		NHM	1984.10.10*	19/03/1981	M		1,020 m	
Kamituga	17	03°04'S, 28°11'E	RMCA	93.485	04/06/1958	F	3	1,060–1,100 m	Prigogine (1971)
"	"		RMCA	57.773*	23/02/1951	M			
"	"		RMCA	57.772	07/07/1951	F			
Kakanda	18	03°11'S, 28°20'E	RMCA	103.005	14/08/1954	F	2	1,180 & 1,270 m	Prigogine (1971)
"	"		RMCA	103.006	16/08/1959	M			
Nyabisanda	19	03°11'S, 28°22'E	RMCA	84.336	19/06/1951	F	1	1,300 m	
Kanyaa	20	03°24'S, 28°12'E	RMCA	119.230	17/05/1969	F	1	-	
Mandza / Mandja	21	03°27'S, 28°21'E	RMCA	84.337	06/10/1956	F	1	1,360 m	Prigogine (1971)
Lumbokwe	22	03°33'S, 28°10'E	IRSNB	69864	19/05/1987	M	1	1,060 m	
Kiliza	23	03°42'S, 28°10'E	RMCA	113.842	24/01/1966	M	1	1,580 m	
Mwenge	24	03°42'S, 28°10'E	RMCA	115.215	17/02/1967	F	1	1,540 m	
Kitongo	25	03°46'S, 28°11'E	RMCA	111.114	10/06/1964	M	2	1,390 m	
"	"		RMCA	111.115	12/06/1964	F		1,470 m	
Mbutaba	Undetermined		IRSNB	68679	24/09/1984	M	2	925 m	
"	"		IRSNB	68680	03/10/1984	F		925 m	

Unexamined material								
Democratic Republic of Congo								
Eastern (Orientale) Province								
Simbo	4	01°31'N, 29°30'E	NRM	22/06/1921	F	1		Gyldenstolpe (1924)
Moera (Sikwakira) [type]	9	00°38'N, 29°32'E	NMW	Aug 1910	M	1		Sassi (1914, 1915, 1916)
Ukaika	10	00°36'N, 28°51'E	NMW	Jan 1911	F	1		Sassi (1914, 1915, 1916)
Uganda								
Ntandi	26	00°48'N, 30°09'E	NHMLAC	17/06/1967	F	1	700 m	Friedmann & Williams (1968, 1971)
					Total 44			
Field record								
Democratic Republic of Congo								
Eastern (Orientale) Province								
Apharama	3	01°33'N, 28°32'E		Feb–Mar 1996 ?		3	800 m	Plumptre & Mutungire (1996), Plumptre (1997)

* = aberrantly plumaged individuals; see text

#(label data unless reference given)

Note: Localities 23 (Kiliza) and 24 (Mwenge) are given the same map reference by Prigogine (1971) although the map in Prigogine (1978) shows them to be in slightly different locations. The map reference for locality 20, Kanyaa, is given by Prigogine (1971) as 03°54'S, 28°12'E, whilst from the map in Prigogine (1978) it is clear that this should read 03°24'S, 28°12'E. Schouteden (1969:16) uses the name Kibongo for one of Prigogine's collection localities of *P. lorenzi*, apparently in error for Kitongo, locality 25.

Repositories: IRSNB = Institut Royal des Sciences Naturelles de Belgique, Brussels; RMCA = Royal Museum for Central Africa, Tervuren; NHM = Natural History Museum, Tring; NHMLAC = Natural History Museum, Los Angeles County; NRM = Naturhistoriska Riksmuseet, Stockholm; NMW = Naturhistorisches Museum, Vienna.

TABLE 2

Mean measurements in mm (± standard error) of bill-, tarsus-, wing- and tail-lengths of *Phyllastrephus lorenzi* and *P. icterinus*. *P* = probabilities associated with Student's t-Test (two-tailed, two-sample equal variance). All *icterinus* skins are from eastern DR Congo; all male and all but three female skins from the same collection localities as *lorenzi*. Bill measurements are of exposed culmen, wing of unflattened chord. *Phyllastrephus* bulbuls are sexually dimorphic in size, with males averaging larger than females; data for each sex are therefore presented separately.

	Bill	Tarsus	Wing	Tail
Males				
P. lorenzi *n*=22 (bill *n*=21)	15.55 ± 0.17	18.47 ± 0.12	74.63 ± 0.70	68.93 ± 0.55
P. icterinus *n*=20	15.34 ± 0.14	18.25 ± 0.11	74.87 ± 0.62	70.25 ± 0.47
p	0.345	0.191	0.807	0.074
Females				
P. lorenzi *n*=18 (tail *n*=16)	14.28 ± 0.11	17.99 ± 0.17	69.62 ± 0.48	63.24 ± 0.83
P. icterinus *n*=20	14.01 ± 0.15	17.73 ± 0.18	68.47 ± 0.52	63.62 ± 0.49
p	0.163	0.303	0.116	0.680

the patch may be reduced in adults of either sex. Two males held in IRSNB, Brussels (see Table 1 for explanation of acronyms), nos. 69190 and 69191 from Itabe, appear to be immatures; the tips of the rectrices are more pointed than in other specimens, the gape of specimen 69190 shows evidence of a relatively large flange, whilst label data indicate both had very small testes. The crown patch is not well marked in either but some black feathering is apparent throughout, including on the forecrown; both specimens have also lost some crown feathering, apparently during preparation. Whilst not entirely convincing, this appears to indicate that immatures may show some black coloration across the entire crown. If, however, the size and / or intensity of the black patch were to increase with maturity, *lorenzi* would be unique in the genus in showing such a large difference between immature and adult plumages.

In size *lorenzi* and *icterinus* are extremely similar. Comparisons of bill-, tarsus, wing- and tail-lengths of *lorenzi* skins with a series of *icterinus*, the latter mostly collected from the same localities as *lorenzi*, reveal no statistically significant morphometric differences between them in either sex (Table 2).

Overall, therefore, the two species appear to differ only in the degree of melanin in the plumage and the irides with *lorenzi* consistently darker, particularly below. The similarities are obvious when one compares the photograph of *lorenzi* (Fig. 1), taken at Apharama, Ituri (Plumptre & Mutungire 1996, Plumptre 1997) with a living example of *icterinus* from Mt Hoyo, also in Ituri, published in Lippens & Wille (1976). The latter shows perceptible darkening on the fore- and midcrown which approaches those of some *lorenzi* specimens.

Of the 40 skins I have examined, four (denoted in Table 1) are aberrant to varying degrees and with differing patterns, such that they show irregular warm brown feathering variously on the crown, mantle, back, wing-coverts, breast-sides and lower flanks (Fig. 4). Three also have pale legs; legs of 'normally' plumaged birds are dark. These same three specimens appear fully adult; on the basis of testes sizes indicated on the original label, the NHM specimen certainly is. This skin was obtained through exchange with IRSNB and bears a crude, grey-green handwritten label with the male symbol and the figures '5×4 6×4' written on it. M. Louette (pers. comm.) has confirmed that this is the sort of label used by Prigogine's local collectors in Itombwe, Kivu, whence this specimen comes, and that the data do refer to testes measurements.

Distribution and altitudinal range

The range of *P. lorenzi*, based on skins plus an additional recent field record supported by photographs, is shown in Fig. 5. Records are concentrated in the Ituri and Semliki forest areas of Eastern (=Orientale) Province of eastern DR Congo, plus one specimen from adjacent Bwamba in Uganda. There is also a record from Hombo, west of Mt Kahuzi, slighty north of the remainder in south Kivu, centred around Kamituga, in Itombwe. With the notable exception of a single outlying record from Bambesa, in the west of Eastern Province, the distribution of *lorenzi* is

Figure 1 (left). Sassi's Olive Greenbul *Phyllastrephus lorenzi*, Apharama, Ituri, DR Congo, February/ March 1996 (Andrew Plumptre)

Figure 2 (below). Ventral view of two Icterine Greenbuls *Phyllastrephus icterinus* (LHS) [specimen nos. 69172 and 71116, both males] and two *P. lorenzi* (RHS) [specimen nos. 68680, female, and 68679, male], all from Itombwe, Kivu, DR Congo. IRSNB, Brussels, April 2005 (Lincoln Fishpool)

Figure 3. Frontal views of two *Phyllastrephus icterinus* (LHS) [specimen nos. 69172 and 71116, both males] and two *P. lorenzi* (RHS) [specimen nos. 68680, female, and 68679, male], all from Itombwe, Kivu, DR Congo, showing variation in degree of black coloration on crown. IRSNB, Brussels, April 2005 (Lincoln Fishpool)

Figure 4. Dorsal view of *Phyllastrephus lorenzi* [specimen no. 1984.10.10] showing abnormal rufous coloration. NHM, Tring, July 2004 (Lincoln Fishpool © Natural History Museum, Tring)

therefore almost entirely confined to a narrow band fringing the western edge of the mountains of the central Albertine Rift. Prigogine (1980) pointed out that all records from Kivu then known were limited to a strip 15–25 km wide; though subsequent collecting has broadened this somewhat, Prigogine's point remains valid. With a total distribution estimated at less than 50,000 km^2, *lorenzi* is considered a species of restricted range, confined to the Eastern DR Congo Lowlands Endemic Bird Area (Stattersfield *et al.* 1998), and was assessed as Near Threatened by Collar & Stuart (1985) in which category it remains (BirdLife International 2006).

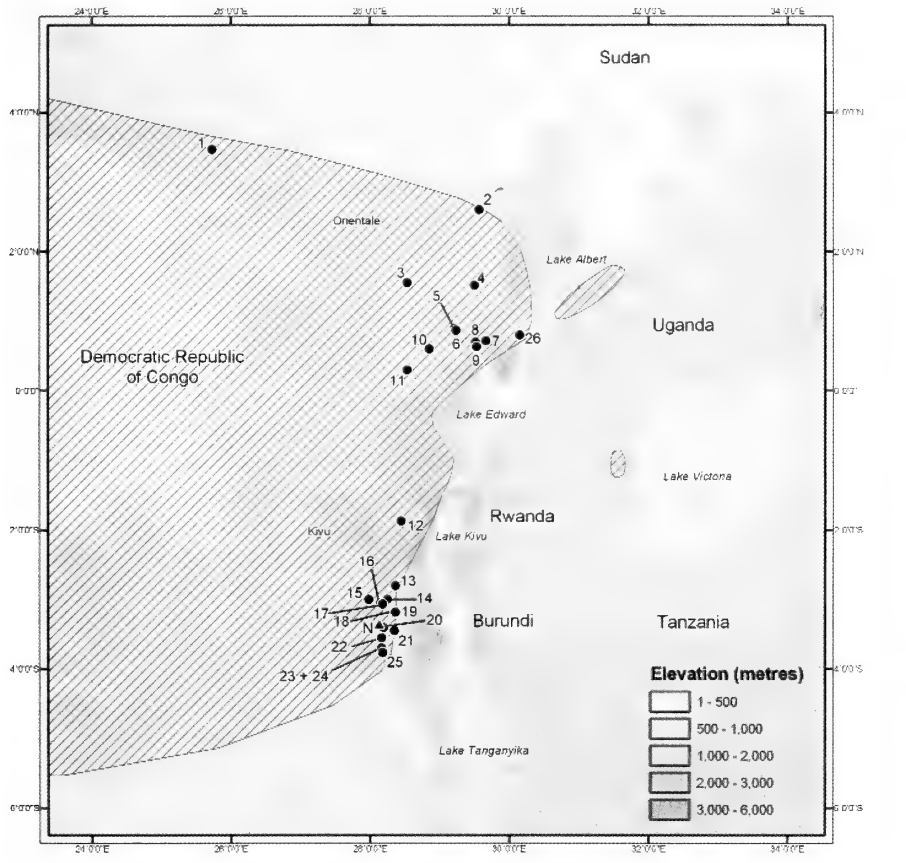

Figure 5. Map showing location of specimen and field records of *Phyllastrephus lorenzi.* Hatching indicates approximate distribution of *P. icterinus* in eastern DR Congo, Uganda and Tanzania. Details of numbered localities are given in Table 1. Solid triangle labelled 'N' indicates location of Nyamupe, site of the holotype of *Andropadus hallae*—see text. Altitude data from GLOBE Digital Elevation Model, Version 1.0. Database available at: www.ngdc.noaa.gov/mgg/topo/globe.html.

The geographic range of *lorenzi* is entirely coincident with that of the common and widespread Icterine Greenbul *P. icterinus* (Fig. 5), which extends throughout Upper and Lower Guinea and the Congo Basin forests east to parts of western and southern Uganda and north-west Tanzania (Keith 1992, Baker & Baker 2001, Carswell *et al.* 2005).

P. lorenzi is considered a species of the transition (mid altitude) and lower montane forest zones (Prigogine 1971, 1978, 1980, Keith 1992); its altitudinal range is given by Prigogine (1971), repeated by Keith (1992), as 1,060–1,820 m. As such, it appears to be found significantly higher than *icterinus*, the altitudinal limits of which are said to be sea level to 1,250 m (Keith 1992). These figures imply relatively little overlap. The range limits of both forms, however, demand revision. Thus, in Itombwe, Prigogine (1971, 1978) records *icterinus* to 1,420 m—the record from 1,430 m mentioned in Prigogine (1971) is corrected in Prigogine (1984) as referring to Xavier's Greenbul *P. xavieri.* For *lorenzi*, from specimens for which altitude is included on label data, and from information in the literature, a more accurate assessment of range appears to be 700–1,580 m (Table 1). The lower figure comes from Friedmann & Williams (1968, 1971), where it appears as 2,300 ft. Inspection of map contour data for specimen localities for which no altitudes are given suggests, however, that the outlying, westernmost record from Bambesa is lower still, nearer 600 m. At the upper extreme, there is a single record from 1,820 m, from Lukigi in Itombwe (RMCA specimen no. 118.869, collected 2 March 1969) and which is the reason for the claim that *lorenzi* occurs in the lower montane zone. This skin, along with all others from Itombwe, results from Prigogine's collections. The altitude data given in the associated publications (Prigogine 1971, 1984) are consistent with the labels of his specimens, including that putatively from 1,820 m. This figure, however, appears anomalous for several reasons. Altitudinal information is given on label data and/or in publications for 30 specimens, as well as for the recent field record; of these, 26 are from below 1,400 m, with one each from 1,470 m, 1,540 m and 1,580 m (Table 1). The specimen from 1,820 m is therefore exceptional. The detailed map of Itombwe in Prigogine (1978, 1980), however, shows Lukigi to be well below this altitude and, indeed, at some distance (*c.*8 km at the nearest point) from the 1,500 m contour. The map also shows other named localities to be closer to this contour than is Lukigi. There is a second *lorenzi* specimen from Lukigi in RMCA (no. 118.870 taken 6 March 1969), said to be from 1,300 m, a height consistent with the map. It is tempting therefore to infer that the figure of 1,820 m may be incorrect, perhaps a transposition error for 1,280 m, or possibly 1,320 m, with a poorly formed 3 misconstrued as an 8.

There are, however, a number of skins of other taxa from Lukigi in RMCA, of which several also apparently come from well above 1,500 m, which appear to rule out a simple *lapsus calami.* On the other hand, one at least of these also seems questionable, since it is of an otherwise lowland species: a Crested Malimbe *Malimbus malimbicus* (no. 118.879 taken 8 March 1969) from 1,930 m. This altitude, also published in Prigogine (1971), is, on the basis of data in Fry (2004),

400–500 m higher than otherwise recorded for the species. (This anomalously high record is not, in fact, mentioned by Fry (*loc. cit.*), which appears to be a deliberate omission, since the account, explicitly using other data from Prigogine (1971), states that *M. malimbicus* is 'very common in Itombwe at 580–1,490 m.') The collection dates of all the Lukigi material are within a few days of the *lorenzi* specimens but they bear no local collector's labels and M. Louette informs me that, frustratingly, RMCA does not hold the volume of Prigogine's field diary for this period.

It should be borne in mind that much of Prigogine's collecting was undertaken by his assistants in his absence and therefore there may be some uncertainty as to accuracy of the associated data. Although this matter cannot be resolved, I suggest that sufficient doubt remains over the 1,820 m *lorenzi* record for it at least to require confirmation. If discounted, the difference in the upper altitudinal limits between *lorenzi* and *icterinus* in Itombwe reduces to 160 m, whilst the extent of overlap is considerable.

Behaviour

The few field observations of *lorenzi* could equally well apply to the much better known *icterinus*. Thus, it is reported to occur in small groups in the lower and middle strata and to join mixed-species flocks, behaviour consonant with that of *icterinus* (Keith 1992). Prigogine (1971) states that *lorenzi* 'moves slowly allowing good views of cap' implying that it is not a skulker, unlike most congeners, but like *icterinus* (and *P. xavieri*).

Discussion

In addition to the localities mapped in Fig. 5, *lorenzi* has been reported from two further areas in eastern DR Congo in the literature, but I have been unable to find corroborating evidence for either. Thus, Prigogine states that, as well as the 'forests west of Lake Kivu' (which includes Hombo, locality 12 on Fig. 5) and Itombwe, *lorenzi* also occurs in Ruwenzori and the 'forests west of Lake Edward' (Prigogine 1985). The basis for the claims for these latter areas is unclear and they are contradicted by Dowsett (1985) in the same volume. However, Collar & Stuart (1988) and Demey & Louette (2001), apparently following Prigogine (1985), also reported *lorenzi* in the forests west of Lake Edward, whilst Pedersen & Languy (1994) included it in their avian checklist of Virunga National Park, which includes much of Ruwenzori. Besides the documented record from Apharama in Ituri (locality 3), further sightings have been reported from here, as well as from Epulu some 20 km to the south (Dejaivre 1989, Sacchi 1997), but no supplementary details are given.

If *lorenzi* and *icterinus* are so similar in appearance why has this not been recognised before? Undoubtedly, paucity of material and, especially, of field experience of *lorenzi* has contributed; the records of Plumptre & Mutungire (1996)

and Plumptre (1997) are the only ones published, as far as I am aware, concerning live birds. In museum trays the black crown of *lorenzi* marks it as distinct within a genus not noted for its variety or boldness of coloration. Chapin (1953), on the basis of the only three skins known to him, did acknowledge that '*P. lorenzi* is somewhat like *P. icterinus* in general form, but more greenish below and more washed with brownish above.' This observation does not seem to have prompted further enquiry.

Indeed, Hall & Moreau (1970) included *lorenzi* in their Baumann's Greenbul *Phyllastrephus baumanni* superspecies, along with Toro Olive Greenbul *P. hypochloris* (as a subspecies of *baumanni*) and Cameroon Olive Greenbul *P. poensis*. Their basis for doing so is not entirely clear—the sole specimen of *lorenzi* in NHM was not obtained until 1984, so it is possible that Hall & Moreau's judgment was not based on an examination of skins—since they merely state that 'they are all small and dark with shorter bills than other members of the genus.' They also state that *lorenzi* 'is like *P. baumanni* but has a black patch on the crown (darker than that of *poensis*).' However, the implication here, that *P. poensis* has a dark crown patch, is misleading since although the crown and nape of *poensis* average darker olive-brown than the rest of the upperparts, the effect is in no way comparable to the black crown patch of 'typical' *lorenzi*. Prigogine (1980), moreover, demonstrated that *lorenzi* is sympatric with *hypochloris* in Itombwe and therefore they cannot be members of the same superspecies and also showed that *lorenzi* is distinctly shorter tailed than *hypochloris*. He does say though that the two '*forment un groupe d'espèces.*' What is clear from more recent knowledge is that there is no possibility of a close relationship, morphologically, ecologically or vocally, between the large *P. baumanni* and *P. hypochloris* on the one hand and the small *P. icterinus* on the other (Keith 1992, Fishpool 2000, Fishpool & Tobias 2005).

The differences in coloration between *lorenzi* and *icterinus* do seem to be explicable in terms of melanism. It is tempting to speculate that the black on the crown may be an instance of acromelanism, wherein the cooler parts of the body, including the top of the head, are more heavily pigmented than the warmer parts; environmental temperature can be a determining factor in this (van Grouw 2006). Such supposition aside, the fact is that studies have shown that whilst the genetic basis for melanism is the same in a range of distantly related birds, the effects of the single locus concerned on patterning is extremely varied (Mundy 2005). On the basis of the evidence presented here, H. van Grouw (*in litt.* 2006) considers plausible the idea that *lorenzi* is a melanic morph of *icterinus*; the darker eye colour of *lorenzi* is also consistent with melanism (van Grouw 2006).

In addition to the considerable degree of variation in the amount of black on the crown in *lorenzi*, it is curious that the plumage of four of the 44 known specimens differs in showing varying amounts of contrasting rufous coloration, not distributed to any consistent pattern. Whether these aberrant specimens are also a manifestation of melanism—the phenomenon of phaeomelanism results in increases in reddish-brown pigments (van Grouw 2006)—or has an unrelated explanation is unknown.

The single specimen in NHM is one of these (Fig. 4), and because it has been used to illustrate the bird in a number of standard works (Keith 1992, Stevenson & Fanshawe 2000, Sinclair & Ryan 2003), this has had the unfortunate consequence of giving an inaccurate impression of *lorenzi* relative to the majority of specimens (including, on the basis of the illustration and description in Sassi (1916), the type), particularly in the large brown patch on the hindcrown, which is a feature of this skin alone.

If *lorenzi* should prove to be a melanic form, an interesting parallel is provided by the case of *Andropadus hallae,* which was described from a single specimen collected in 1970 from Nyamupe, Itombwe (Fig. 5), at an altitude of 990 m (Prigogine 1972). Whilst recognising that this individual resembled the sympatric Little Greenbul *A. virens*, Prigogine (*loc. cit.*) pointed out that it differed by having 'a generally more dark colour of plumage' as well as having 'a blackish beak, a tarsus and feet equally blackish.' Prigogine's detailed plumage description highlights the overall dark olive-green coloration of the plumage and emphasises the lack of yellow tones typical of *virens.* In addition, though no size differences were found, *hallae* differed from *virens* in having a less graduated tail. After comparing this specimen with over 1,000 skins of *virens* Prigogine decided that it was sufficiently different to merit description as a species. As, however, subsequent collection in the area failed to reveal any further specimens, Prigogine, quoted in Keith (1992), came to believe the bird to be a melanic specimen of *virens*, a treatment adopted by subsequent authors.

Though confirmation (or otherwise) of my belief that *P. lorenzi* is a form, possibly a melanic one, of *P. icterinus* must await further study, particularly of vocal, behavioural and molecular data, I suggest that sufficient evidence is available to cast serious doubt on the specific status of Sassi's Olive Greenbul. As it is currently considered a species of global conservation concern, classified as Near Threatened (BirdLife International 2006), such a change of status potentially has practical implications, as and when circumstances in the region should permit conservation activities to resume.

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Possible etymology of the generic name *Magumma* for the Anianiau (Drepanidini)

by Storrs L. Olson

Received 10 February 2006

The Anianiau is a small yellow bird belonging to the cardueline finch tribe Drepanidini that is endemic to the Hawaiian island of Kauai. It was first described by Stejneger (1887) as *Himatione parva*, before that genus was restricted to the Apapane *H. sanguinea.* It has since usually been associated with the amakihis and has been moved around with them in the genera *Chlorodrepanis*, *Loxops* and most recently *Hemignathus.* Other authors have been uncomfortable with this and have sought to remove the Anianiau to its own genus or at least disassociate it from amakihis. Molecular evidence supports this, as in a phylogeny derived from mtDNA sequences the species is well removed from the amakihis (Fleischer *et al.* 2001), and Pratt (2001: 81) opined that it 'should be removed from [*Hemignathus*] and placed in its own genus *Magumma.*'

In the introduction to their book on Hawaiian birds, Wilson & Evans (1899: xxi) stated: '*Himatione parva*, though having a straight bill, Mr. Perkins now wishes to keep apart from *Oreomyza,* and to place it in a genus by itself as *Rothschildia parva* ... .' Richmond (1902: 713) gave the authorship of *Rothschildia* as 'Perkins in Wilson and Evans,' but Perkins (1903: 411) disavowed ever having any intention of proposing such a genus. Regardless, *Rothschildia* as it appeared in Wilson & Evans (1899) is preoccupied by *Rothschildia* Grote (1896: 204) used for a genus of

Lepidoptera. There was also a subsequent use of *Rotschildia* (*sic*, *lapsus*) in Amphibia (Mocquard 1905).

Mathews (1925: 93), in a spate of 17 new genera, proposed the generic name *Magumma* as a replacement for *Rothschildia*, with *Himatione parva* Stejneger as the type. He gave no explanation of the meanings of any of the new names. If not pure nonsense, what could be the derivation of the uncouth word *Magumma*?

Gregory M. Mathews was one of the most notorious and prolific generic splitters in the history of ornithology, proposing about 536 new generic names (M. D. Bruce *in litt.* 29 June 2002). To maintain his furious pace he had to strain mightily and many of his names were etymologically dreadful, but there often seems to be some sort of reasoning behind them (e.g. *Tomirdus,* named for Tom Iredale and used for the rail now known as *Rallina tricolor*).

One device of the desperate word coiner is to resort to anagrams. The letters of *Magumma* can be rearranged in only one way that spells something recognisable—*gamma mu,* the Greek letters equivalent in Latin to *G* and *M*. They also happen to be the initials of Gregory Mathews. Though it cannot be proved, it appears that Mathews may have cryptically named this new genus for himself.

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